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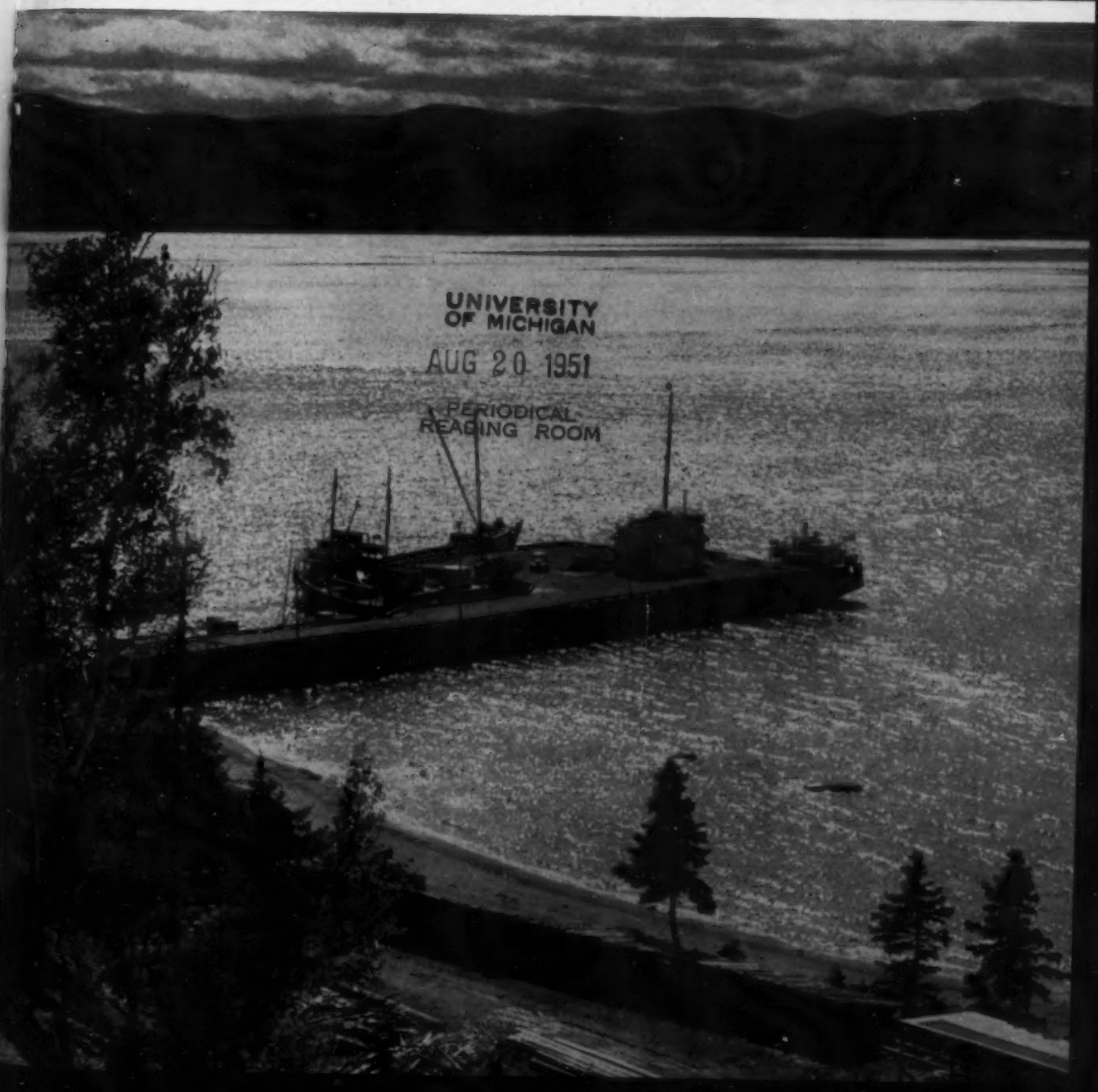

THE CANADIAN GEOGRAPHICAL SOCIETY

OTTAWA, CANADA

The Society's ambition is to make itself a real force in advancing geographical knowledge, and in disseminating information on the geography, resources and people of Canada. In short, its aim is to make Canada better known to Canadians and to the rest of the world.

As one of its major activities in carrying out its purpose, the Society publishes a monthly magazine, the Canadian Geographical Journal, which is devoted to every phase of geography—historical, physical and economic—of Canada, of the British Commonwealth and of the other parts of the world in which Canada has special interest. It is the intention to publish articles in this magazine that will be popular in character, easily read, well illustrated and educational to the young, as well as informative to the adult.

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The Society has no political or other sectional associations, and is responsible only to its members. All money received is used in producing the Canadian Geographical Journal and in carrying on such other activities for the advancement of geographical knowledge as funds of the Society may permit.

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The articles in this Journal are indexed in the *Canadian Index* which may be found in any public library.

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Photograph by Richard Harrington

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PRINTED IN CANADA

Ile-aux-Coudres

by LYN HARRINGTON

Photographs by
RICHARD HARRINGTON

SOME SIXTY MILES downriver from Quebec City is a small humpbacked island where tradition reigns. Ile-aux-Coudres displays the charm of a quiet countryside, folkways that are ancient and unique, and an insularity which sets its people apart even from other French-Canadians.

On September 6, 1535, Jacques Cartier dropped anchor in the little cove at the foot of the steep hills, and he and his crew went ashore to celebrate the first Mass recorded in Canadian history. Cartier, having explored the island, called it *Ile-aux-Coudres*, "Hazelnut Island", because of the abundance of hazelnut shrubs.

A stone cairn surmounted by a cross commemorates that historic occasion. From its site in a tiny park in the parish of St-Bernard, one looks down the steep slope to the turgid St. Lawrence, locally called "the sea". Across the channel rise the blue Laurentians, with the village of St-Joseph nestled at the water's edge, and Les Eboulements on the crest. Baie-St-Paul is tucked in a fold of the hills, out of sight.

On the water below, the ferry shuttles between St-Bernard-sur-Mer and St-Joseph-de-la-Rive. A Saguenay cruiseship sails by like a gracious dowager. Grey battleships or ocean-going freighters slide past with scarcely a sideways glance. In l'Anse (the cove) below, *goélettes* (schooners) loaded high with pulpwood wait their chance to journey upstream with the strong incoming tide. A lighthouse marks a reef just beyond the cove where Cartier anchored four centuries ago.

"Hazelnut Island" would present a vastly different picture to the explorer's eyes today, with its cleared fields, its orchards, its comfortable homes. The island is about five miles long by three in width and is looped by eighteen miles of road. The maples, cedars and spruces of Cartier's day remain in woodlots, but the hazel shrubs are few.

There are about 2,000 inhabitants, most of them farmers or fishermen, or both. But there are only sixteen family names on the island. The French speech used here differs in some respects from that of the rest of Quebec; English is spoken only by the young men who ship as sailors, or work on the docks in summer. Many of the local customs date back to the days of the first settlers.

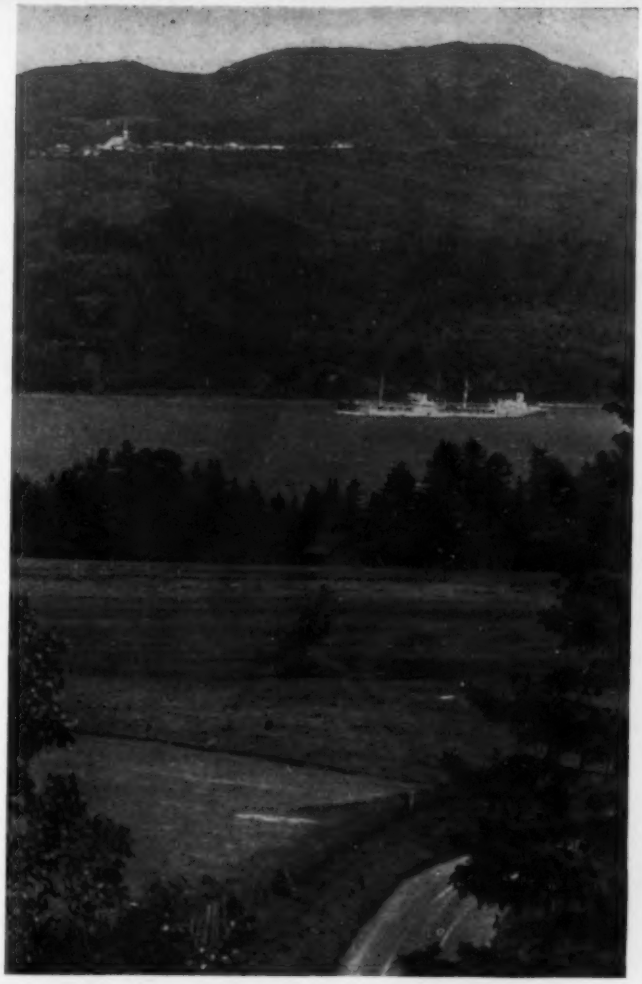
The road around the island is on the height for part of the way and for the rest runs along the foot of the plateau. From the Cartier monument, travelling counter-clockwise, it passes first through the parish of St-Bernard, where one may see a patient spotted ox plodding in the fields, a farmer in a two-wheeled blue cart fertilizing his

At top:—Plaque on the monument at St-Bernard, Ile-aux-Coudres, commemorating the discovery and naming of the island.

strip of land with seaweed, or a scarlet tractor roaring across the fields. Ancient France lingers, but Ile-aux-Coudres belongs to no one period of time.

The road then leads through the maple sugarbush to Cap-à-la-Branche, where the height gives a splendid view of the fields below and the St. Lawrence pounding in the shallows. A slender point reaches out into the river, with a light station at the tip of its shale shore. Nearby is a cross set up where "Rev. P. de la Brose, S.J., first resident missionary, said his first Mass in 1765".

In the parish of St-Louis-de-France, the road drops to sea level. A stone windmill stands off to the left. On Sundays its arms are pegged into position, but on weekdays it grinds grain for the islanders as it did for the Sulpician Fathers for whom it was built in 1618. The walls (four feet thick) are sturdy, and the massive woodwork inside,



Right:—View from Cap-aux-Pierres, showing a warship in the St. Lawrence and the rolling Laurentians beyond.

Below:—Fishing boats (made on the island) at St-Louis quay.

Seaweed, gathered in the weirs or along the shore of Ile-aux-Coudres, is strewn over the sandy soil as fertilizer. Potatoes are planted at once in the seaweed-lined furrows.

Although now a rarity, oxen are still used to plough and harrow the narrow fields on the island. The old-fashioned harrow is made of wood with spikes of iron.

though worn, is still sound. Ordinarily there is sufficient wind to grind the grain. But when there is not, the long pole, reaching almost to the ground, is hitched to a horse, which plods around, turning the entire turret to grind the grain.

Near the mill and its apple trees is the oldest house on the island, long and low in the Norman style, with a verandah all across the front. It was built during the French régime, about 250 years ago, according to the present owners. A radio aerial between the old chimneys emphasizes the mixture of eras on Ile-aux-Coudres.

The tall twin steeples of the parish church may be seen from a great distance. St-Louis, the saintly king of France, is represented above the doorway, clad in a short tunic with his sword at his side. Interesting historical murals ornament the curved alcoves of the church ceiling. Beside the road stand two little wayside shrines, *reposoirs*, half a mile from the church in either direction. Wayside crosses appear here and there, and in front of them little boys touch their caps, or tug a forelock.

A number of island-made boats lie berthed at St-Louis quay. Boat-builders who cannot

read a blueprint can nevertheless make excellent vessels, and carefully guard the shipbuilding secrets learned from their fathers. The custom is to build a small model, then multiply the measurements. Many ships of 125 tons have been constructed thus by men whose only drafting tools are pencil and ruler.

The shore beyond the village is named La Baleine for a whale cast up by the tide about seventy years ago. Vertebrae from that denizen of the deep are treasured in homes along the south coast, for whales are scarce, though other fish are abundant.

All along La Baleine are fences of woven brush set out into the water in the form of a right-angle, with a circular trap at the angle. At low tide the fisherman harnesses his horse to a two-wheeled cart, takes the slanting road from his home on the plateau, and jolts out over the rocky shallows to *la pêche*. The retreating tide leaves a pool of muddy water in the trap, alive with silvery capelin, herring or whiting, which the fisherman scoops up with his home-made long-handled net. The fish may be consumed by the family, sold to the neighbours, or, rarely, shipped to Quebec City.

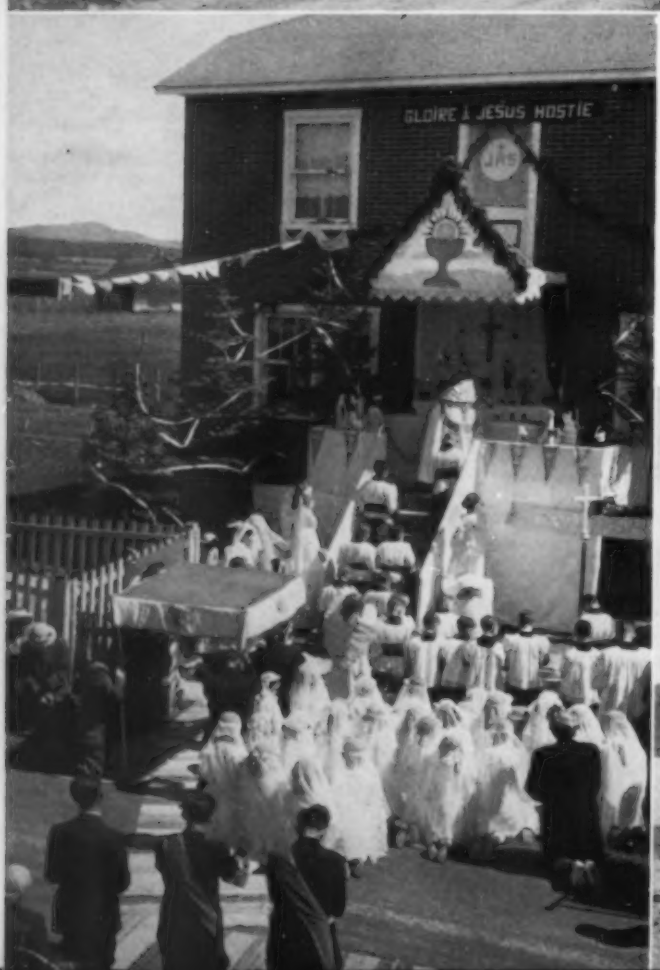
Towards the east end of the island Cap-aux-Pierres rises above the road. At its foot is a clear spring which, drop by icy drop, fills a small depression. They call it "the weeping rock", and the hotel on the cape above bears its name, Roche Pleureuse. This is the island's only hotel, and caters to summer visitors with tennis, badminton, croquet, hiking or swimming. But relatively few tourists have discovered Ile-aux-Coudres, and the unspoiled countryside is a rural retreat.

The flat low end of the island—*au bout en bas*—is "the domain", a commons where farmers may cut wood, gather seaweed, and set out their fishing weirs. In this area there are swamps where the sora rail whistles, where redwinged blackbirds chortle on dead cattails, and where thousands of wild ducks and geese rashly come to rest in shooting season.

Now the road climbs the steep slope again, winding past old houses back to the parish of St-Bernard. In one of these houses a century-old black double-decker stove still warms the kitchen and bakes the family's bread. A short distance beyond is an outdoor oven, which has long been used for baking eighteen double loaves of bread at once. The dome of thick clay and straw takes about an hour and a half to produce golden-crusted loaves; the total process is a long one, since the oven requires two firings to create sufficient heat. The big kitchen range and the village baker have combined to outmode both the old-fashioned stove and the outdoor oven.

Far from dying out, weaving is an important and valuable resource in every island household, producing woollen materials from island fleeces and cotton *catalognes* (woven strips of cloth). The trees around a doorway are often festooned with drying loops of cotton in red, blue, green, orange and yellow.

Outdoor ovens are losing favour, but this one still bakes a week's supply of bread at a time. Two firings of wood heat the interior sufficiently to bake the loaves in an hour and a half.



Above:—The wayside shrine, 1618 windmill, and oldest house on the island (left to right) — in the parish of St-Louis.

Left:—The Fête Dieu *(Feast of Corpus Christi) calls all worshippers to follow the Host in procession along the main road to a* reposoir *(wayside shrine).* Catalogne *rugs are spread on the ground.*

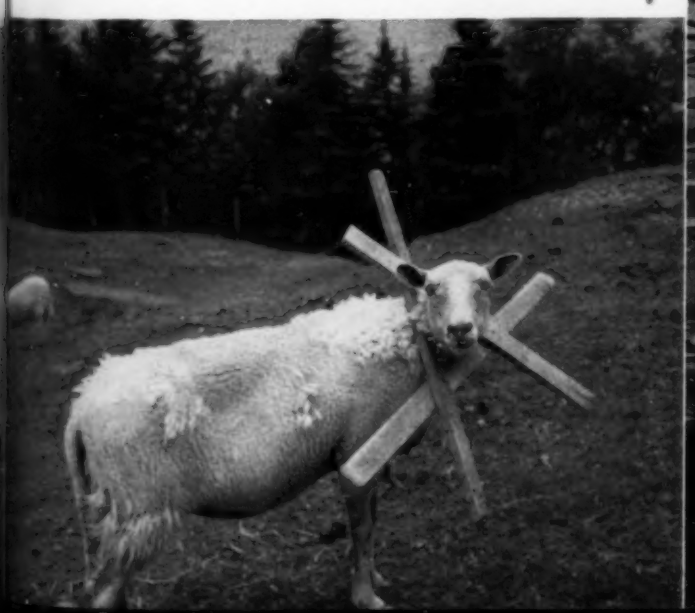
Below:—At Cap-à-la-Branche a cross commemorates the first Mass said by the first resident missionary on the island.

Above:—A fisherman using his vasigeau *to scoop capelin or herring out of the circular trap of the fishing weir after the tide has receded.*

Above right:—Soap is still made in a big black pot over an open fire — but Madame prefers a less windy day.

Right:—A visitor examines fishing weirs (not currently in use) made of woven brush.

Below:—Most island sheep wear wooden neck-pieces to keep them within the fences.



These are tailings from the factories, clean white cotton which is dyed on the farm to the desired colours. The strips are cut wide for making heavy fabrics for floormats. Finer strips go into draperies, upholstery and bedspreads. These last are made on a double loom, with two weavers working together.

In this district there are good-sized apple orchards, from which thousands of bushels are exported yearly. Sweet yellow plums also do well on the island. A few farmers have turned to strawberries, a specialty crop which gives them greater returns than the traditional potatoes and oats. Some empty sheds recall a day when silver fox ranching was more profitable than at present.

The church of St-Bernard stands close to where the road makes its plunge down to the dock. The interesting feature here is a large mural over the altar depicting the arrival of Cartier and the celebration of the first Mass.

Ile-aux-Coudres' outstanding characteristic is its independence, its self-sufficiency. Children are taught to be useful from an early age, and whatever can be accomplished at home is done there—even haircuts and shoe repairs. There are no movies and little organized social life. *La veillée*—the evening spent with neighbours, playing cards, telling

Top left:—Narrow curved staircases lead to the second storeys of the island's older houses.

Left:—A pretty Islander, the costume of the first settlers, demonstrates some local home-weaving. Curtains and bedspreads are made of dyed cotton catalognes, while the blanket is woven from the wool of island sheep.

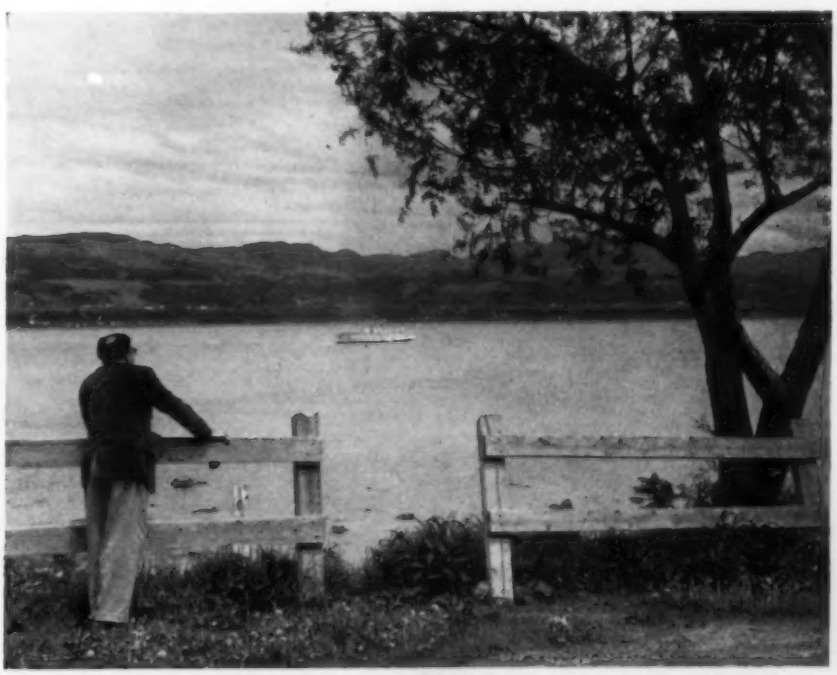
Vertebra of a whale cast up on the island's south shore many years ago.

stories, singing or courting—is the standard entertainment. Square dancing takes in half a dozen couples to a set, instead of the more usual eight partners. And it is still the custom for guests to contribute a song, dance or story on request.

The main event of the winter is *la veillée des âmes*, the "evening of souls", when a bazaar is held to raise money for Masses for the dead. The parishioners donate various items, then bid at auction. Everyone is anxious to see a good sum realized, yet the practical *habitant* would like to acquire virtue without paying too dearly for it; to gauge this to a nicety requires acute judgment, and excitement runs high!

New Orleans and other places may have their Mardi Gras, but on Ile-aux-Coudres the middle week of Lent is celebrated as *Mi-Carême*. The week is given over to masquerading (in which only the males take part) with masks, costumes that vary each day, attempts to disguise walk, speech, mannerisms as well as clothing. Verbal fencing is the chief means of unmasking, although style of dancing often betrays the masker. Each day the costuming changes, starting out mildly on Monday, rising to its finest appearance by Thursday, and reduced to the last shreds by Saturday. *Mi-Carême* is the highlight of the year, in fact.

This is a phase of life on Ile-aux-Coudres which the visitor rarely sees. But even a brief stay on the little green island is refreshing and peaceful. It is like resting one's feet in two centuries at the same time.



Visitors to Ile-aux-Coudres enjoy the quiet serenity of its inhabitants' way-of-life and the abundance of beautiful views it affords. A holiday-maker watches a Saguenay cruiseship sliding peacefully down the St. Lawrence.

Mapping The North

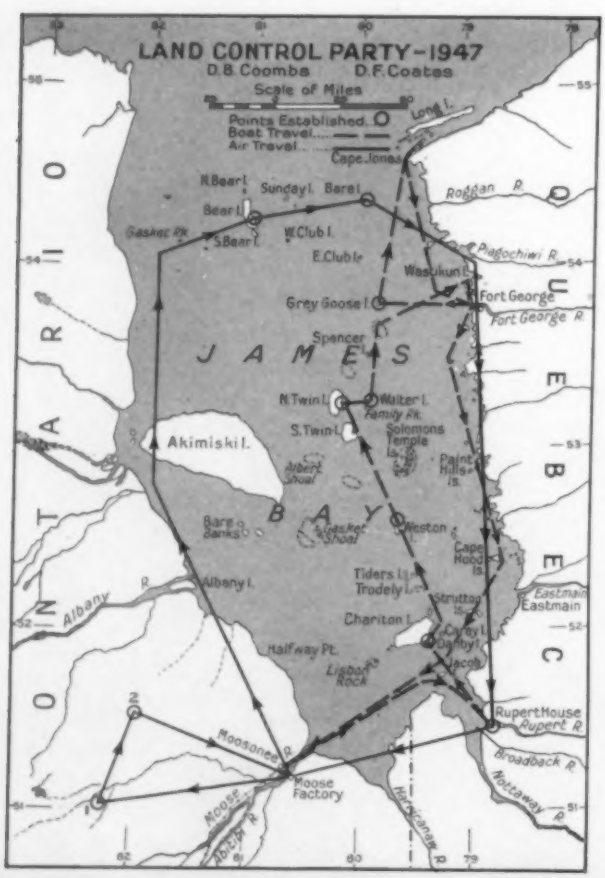
Establishing the Land Control for Aerial Survey on James Bay

by DONALD F. COATES

UNTIL THE LAST WAR two-thirds of Canada, the virtually uninhabited part north of the populated southern fringe, remained practically unmapped. The only way it could be hoped to map this area without prolonged delay was by aerial surveying.

Aerial photography, done mainly by the R.C.A.F., gives a picture of the ground; but this in itself yields insufficient information for map-making. The survey must be located and orientated on the earth's surface; this land control is established by a network of 'points', fifty to one hundred miles apart, located by various methods but mainly by astronomy. The combining of the aerial survey photographs with the land control, and the production of the finished map, a project of the Dominion Surveys and Mapping Bureau, completes the pattern.

In the summer of 1947 the activity of the Geodetic Survey in establishing land control in the far North reached a peak. An expedition of six parties, under the direction of Mr. B. J. Woodruff, operating with the R.C.A.F., went into the Great Bear Lake area. The work here was seriously hampered by poor weather. At the same time two separate parties worked in the James Bay and Southern Hudson Bay region completing the control of this comparatively southern area. One party under Mr. T. H. Manning travelled from Moosonee to Fort Nelson in three canoes establishing coastal points. The other party, led by the writer, concentrated its efforts on the islands of the central part of James Bay. It is the purpose of the succeeding narrative to illustrate typical experiences of these Geodetic Survey parties by telling the story of the work on the islands of James Bay.



Canadian Geographical Journal map

In the spring of 1947 the forty-foot schooner *Notre Dame de l'Espérance* was chartered to transport the party during the summer. The Surveys and Mapping Bureau specified the positions where points should, if possible, be established; these were Charlton, Weston, North Twin, Walter, Grey Goose, Bear, Bare and East Cub Islands. The expedition would have the opportunity of observing the geography of islands about which very little was known before 1947.

After preparing our equipment in Ottawa, Don Coombs and I arrived at Moosonee on June 14th to start our summer's operation. We were told on arrival that it was a late spring and James Bay was still packed with ice. The *Notre Dame de l'Espérance* was at Fort George 200 miles north, and was not expected at Moosonee until the first week in July — ice conditions dictating the time of departure. However, the Hudson's Bay Company ship *Fort Charles* had made its first trip of the season to Albany and back

through heavy pack-ice. Its next trip was to Rupert House, and Captain Barbour agreed to take us along with the possibility of dropping us at Charlton Island, the location of our first astronomic fix. On June 29th we left Moosonee. While only a few miles from the mouth of the Moose River, it was necessary to alter course to the south because of pack-ice. We anchored that night in Rupert Bay, and the next morning, when the tide was high enough, we put in to the post. The arrival of the first boat of the year was of great interest to the Indians living there who crowded on to the dock and shore.

Having unloaded our equipment the *Fort Charles* returned to Moosonee. It had been arranged that we should go to Charlton on the boat of the Hudson's Bay Company Manager, Mr. Michell, and for a few days we stayed at his house. Extra control points always being of value, we established our first point of the summer here at Rupert House.

The H.B.C. post and the Anglican and Catholic Missions of this settlement were about a mile up from the mouth of the Rupert River, sand-bars making the passage difficult for schooners. The land rose gently from the river bank to not more than fifty feet above the water. The area was generally forested with black spruce, some tamarack, poplar and willow trees. As well as the woods, there were areas of spongy ground covered with moss and grass.

On the east side of Rupert Bay the change in the nature of the coast of James Bay was noticeable. Whereas the west coast had broad, muddy, tidal flats, the east side had a distinct coast line with a multitude of small islands; it was close to Sherrick Hill that the contrast became apparent.

We sailed to Charlton Island on July 4th, taking four hours. Before the railroad had been built to Moosonee in 1931, the Hudson's Bay Company had a large depot on

Rupert House, as seen from 1,000 feet, looking eastward over the wing of a Lancaster.

Rupert House, the oldest British settlement in Canada, was founded by Radisson and Groseilliers. Electricity is provided by the windcharger at the left.

Indian dwellings at Rupert House; their appearance almost convinces one of their inhabitants' Mongolian ancestry.

Results of the fire which swept over part of Charlton Island in 1942.

this island where ships from Montreal unloaded supplies for the James Bay area. Fire had destroyed the warehouse, and only two houses remained. Putting mosquito netting on the windows, we occupied a deserted bungalow for twelve days.

The Hudson's Bay Company maintained two Indian families on Charlton Island to catch beaver for their preserves on the mainland. Anderson Jolly, the more voluble of the men, said that he could not remember having seen bedrock on the island — just sand and a few boulders. The promontory on the northeast corner gave the appearance of rock from a distance. Investigation proved this to be a high (100-foot) sandy plateau rather than an outcrop of country rock. Throughout the island short sand ridges fifteen feet high lay in every direction.

Roughly 75 per cent of the island was wooded, mainly with spruce, tamarack, and poplar. In 1942 a fire destroyed about 15 per cent of the woods. The burnt trees had attained an average height of 25 feet with a butt of 9 inches. The remaining trees were much the same size except on the south side of the north promontory where some spruce were found 50 feet high and 18 inches across the base. In dwarf growth there were cedar (1 foot), mountain maple (2 feet), aspen (2 feet), willow (10 feet), alder (10 feet), dwarf birch and mountain ash (7 feet). Other plants identified were caribou lichen, bilberry, wild rose, beach pea, dandelion, labrador tea and sheep-kill.

By coincidence in the evening of our first day at Charlton the *Notre Dame de l'Espérance* sailed in from the north, staying that night and the following day. The schooner, forty feet long with a twelve-foot beam, had been built by the Eskimos of Cape Hope seventeen years before. After the Hudson's Bay Company had used it for ten years, the Mission people bought it. It was run by Brother Goulet, assisted by two Indians: Richard, ordinary seaman, and Robert, the pilot.

The bight between Charlton and Danby Islands where ships formerly discharged supplies for Hudson's Bay Company posts in the area.

Weston Island, looking westward from 3,000 feet. There are good anchorages on either side of the neck-of-land to the west.

As the schooner was not supplied for the summer's voyage it had to push on to Moosonee. Brother Goulet reported solid pack-ice twenty miles out from the coast between Charlton and Fort George, and right in to the coast north of Fort George. We could see scattered ice to the north beyond Carey and Strutton Islands.

The weather thus far had been perfect. On July 6th we were able to take our star observations and complete this point, but for confirmation we observed a second program on July 10th.

The *Notre Dame de l'Espérance* returned from Moosonee on July 14th and we sailed to Weston Island on July 16th. This trip of about sixty miles took seven and a half hours. On passing between the north ends of Charlton Island and Strutton Islands, we observed numerous small, low islands to starboard and one big island, Trodely, on our port side. Trodely, like Charlton, Danby, Carey and Strutton Islands, was wooded with spruce. About four miles northeast of this island we had to alter course for a large shoal. When north of Trodely Island we looked in vain for Tiders Island. (This and associated islands indicated on our maps were not even seen when on September 25th we made our photographic flight over James Bay.) As we approached from the south, Weston Island could be seen by mirage effects while still about twenty miles away. The high sand bluff facing south made it quite conspicuous. There was scattered ice around the island and we later collected a few pieces for drinking water. We sailed around to the bay facing north and set up our camp there.

This island consisted of sand and gravel with a covering of moss and grass. Topographically it was hummocky tundra with a general elevation of sixty feet. There were some small ponds where numerous ducks and geese were breeding. A few scattered spruce trees growing up to twelve feet were seen and ground willow, caribou lichen, beach pea and bilberry were the only other flora identified. On the south side of the island were sixty-foot gravel cliffs having

Flat tundra on Weston Island; geese and ducks are found breeding here.

an angle of repose of 60°. These cliffs (off which a white whale was seen) ran in an east-west direction and made a distinguishing land mark from the sea. Although the island was not completely circumnavigated two good anchorages were found.

The first evening a storm descended upon us and kept up all the following day. On July 18th the weather cleared and we observed a star program, finishing the work for this island. The following morning we got up at 4.30 and sailed for the Twin Islands.

When twelve miles from Weston Island it was necessary to alter course for a shoal. We were learning that even in the centre, as along the coasts, of James Bay one could

Sand, moss and grass tundra on North Twin Island, a game sanctuary. Note the polar bear at right of white arrow.

Walter Island; with a high gravel mound at one end, it has somewhat the appearance of a drumlin.

expect shoals. A little later, about thirty-two miles from Weston, we passed a small rock island about four miles to starboard which was not marked on our National Topographic Series map. Reaching the South Twin Island we proceeded up the east side and continued on to the large bay on the east side of the North Twin which formed an excellent anchorage. The day was clear and warm. We had travelled the fifty-six miles to the North Twin Island in eight hours and forty minutes, the incoming tide seeming to reduce our speed appreciably during this trip.

Owing to our short stay on this island, observations were limited to the bay on which the point was observed. Like South Twin Island, the North Twin seemed to be made of sand and gravel covered with grass and moss. Cliffs ninety feet high rose four hundred feet from the shore north and south of the bay. From the top of these cliffs the land rose quite rapidly another forty feet and then levelled out into a subarctic tundra about 130 feet above the sea. There were numerous lakes and the odd spruce tree growing up to eight feet high. Beach pea, caribou lichen, willow and dwarf birch were noted. One red fox was seen and although few people have ever been on this island, there were many stories of polar bears being encountered there. Polar bear tracks were seen by our Indians and on September 25th, during the photographic flight, one bear was observed. There was still a large bank of snow on the side of the cliff to the north of the point.

Because of strong wind we did not sail for Walter Island until late in the afternoon of July 21st. There was no sign of ice on this trip, although we had seen a field of ice surrounding the island on the previous day.

This island, measuring about half a mile from east to west and one mile and a half from north to south, was a heap of glacial till covered with moss and shaped like a drumlin. At the southern end it rose sharply from the shore to an elevation of fifty feet and then sloped gently to the northern end. There were a few little ponds where ducks and geese were breeding. No trees were seen. There were still a few patches of snow about.

After setting up our camp, doing a ground survey, observing a star program and sleeping, we packed up and left at 5 a.m.

Indian tipi, H.B.C. buildings and windcharger at Fort George, July 1947.

The Anglican Hospital, H.B.C. buildings and wharf at Fort George, as seen from James Bay.

In four days we had done three points with an average of three hours sleep per night. We were beginning to drag a little, but the weather was favourable so on July 22nd we set course for Grey Goose Island and shortly afterwards passed Spencer Island, another low forty to sixty-foot barren sand and gravel land mass. The wind from the south was quite strong and a rough sea developed. With one sail aiding our engine we seemed to be cruising at a good speed. By 11 a.m. we figured our position to be within ten miles of Grey Goose Island although no sign of it was visible. The crew knew nothing of this island and had never heard of anyone having been there, so rather than take the risk of arriving late in the day and finding inadequate protection from the strong wind, they decided to head for the mainland. In view of the fact that the island was obviously incorrectly located on our map, this seemed a wise plan. We gained the protection of the coast at Wastikun Island (meaning in Cree "like a beaver" and so named owing to its shape). This island which we had seen while still about thirty miles away was the highest point on the coast in this area, rising about 200 feet above the water. The shore here was generally low (twenty to fifty feet high) and rocky. In the evening after the wind had died down we travelled six miles south to Fort George. Here Robert rejoined his family resigning his position as pilot.

This post was situated at the mouth of the Fort George River on a sand island which measured approximately one-half by three and one-half miles. The settlement was composed of the Hudson's Bay Company's store and house, the Roman Catholic Mission (church, hospital, school, farm and house), the Anglican Mission (church, hospital, school and house) and a newly erected government nursing station. The river here, although larger and somewhat easier to navigate, was similar to the other rivers of the Bay with numerous sand-bars at its mouth.

High winds and fog kept us at Fort George for three days. During this time, the Brother repaired the cooling system of the engine and caulked some leaks in the hull of the boat. The crew was increased in number by taking on James and George, both of whom spoke only Cree. Subsequent travels would

The Roman Catholic mission at Fort George, in a setting of spruce trees.

Third try successful—Grey Goose Island is sighted on the horizon.

take us up into the part of the Bay (around the Bear Islands) seldom visited by ships, so the two new Indians, having done a lot of sailing, rigged another sail on the schooner. We now had a sail on the main mast and one on the mizzen so that should our engine fail we would not be hopelessly stranded.

On July 26th we set course for Grey Goose Island, leaving at 6 a.m.; by 8 a.m. there was no sign of the island, which supposedly was forty to fifty miles from the coast. A strong wind from the north and a fog bank ahead on the horizon forced us to turn back and spend the night in Stromness Harbour just to the north of the mouth of the Fort George River.

Formed by two islands—one crescent-shaped, the other within the crescent—this harbour gave protection from all winds. According to the crew, many such harbours could be found along the east coast of James Bay as well as many submerged, isolated rocks which were a hazard to navigation. The disaster of the R.C.A.F. ship *Beaver* in 1946 and the accident of the *Nouveau Québec* in 1947, both of which struck unseen submerged rocks on the edge of well-used channels, were good examples of the treachery of these waters.

On July 27th we sailed from Stromness Harbour to Grey Goose Island without difficulty and landed on the shore of the bay facing east. It was a clear warm day and the point was completed by 1 a.m.; but we were then storm-bound for three days.

On the morning of July 30th there was a strong wind blowing from the northeast which forced us to move around to the southwest corner in the lea of the island. In mid-afternoon the pilot looked outside and announced that the anchor was dragging. There was a terrific sea running in front of a 50 m.p.h. wind with a driving rain. The crew emptied out of the hold on to the deck, and there was shrill howling in Cree from stern to bow. The Indians tried letting out more chain on the anchor, but this seemed to be of no avail; we were still being blown out of what little shelter the island offered. It was decided to try to beach the boat. After attempting to raise the anchor without success, we cut the chain. We were then about a mile from the island and for an interminable period seemed to make no headway against the wind. Amidst a rocky shore there was one spot where a small stretch of sandy beach could be seen —this was our destination. The throttle on the engine was opened wide, something which had not been done for many years. It seemed too much to hope that the fourteen-year-old engine would endure the racing caused by the stern being lifted out of the sea. Nevertheless, progress was made; we regained the island and the lone stretch of beach. Then our efforts were turned to

Richard, James and George preparing ducks and geese for winter consumption.

holding the boat on the beach and preventing it from being blown out again. This was done eventually by anchoring and tying ropes on huge boulders. We unloaded first radio, then food, kit and equipment. After half an hour's pounding on the beach the ship was an absolute loss, the ribs on one side being smashed and the sheathing ripped off.

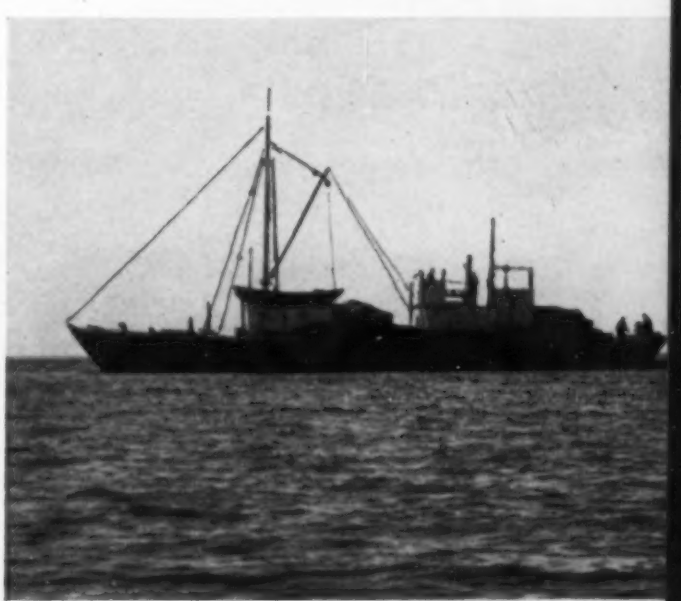
Numb from the cold and wet of rain and sea, we proceeded to put up the tent. In a 50 m.p.h. gale, this was a job for at least six men. After several attempts we succeeded and everyone then changed into clothes which were more or less dry and went to bed. By morning the storm had abated and at low tide we saw further evidence of how lucky we were. The beach had been gained through rocky reefs which might well have made our lot rather less pleasant.

The island was about three-quarters of a mile north to south and east to west and seemed made up entirely of sand but with rocks strewn in some places. In general, the land rose from a generous beach in a series of two terraces, each fifteen feet high, the highest point on the island being about forty-five feet above the sea. In half a dozen ponds there was evidence that ducks and geese had been breeding. The flora of moss and grass formed a tight, healthy covering over the sand. We also identified caribou lichen, bilberry, beach pea and ground willow.

Two days later, with our little forestry transceiver, we were able to interrupt a radio conversation between Moose Factory and the schooner *Fort Charles* and tell both parties our story. This was a transmission of 200 miles with a 2½-watt transmitter designed to be effective for a range of sixty miles. Captain Barbour of the *Fort Charles* said that he would pick us up on his way to Great Whale River. On Sunday, August 3rd, the *Fort Charles* took us aboard and we sailed to Cape Jones, spending the night in the excellent harbour on the north side of the cape. On this trip we passed within six miles of the map position of East Cub Island where we were to locate a point,

After four days on Grey Goose Island, little is left of the schooner but its battered hulk.

Sails from the abandoned ship and driftwood make an excellent tipi for the survey party.



A welcome sight—the arrival of the rescue ship, Fort Charles, at Grey Goose Island.

Brother Goulet and the author with a seal on a small island in Long Island Sound, Hudson Bay.

Limestone outcrop. Long Island Sound.

Possible algae secretions with fifteen-inch diameters in the Long Island Sound limestone.

but saw nothing. None of the Indian pilots on board knew anything about the existence of this island. On September 1st Manning, while on a photographic flight, said that he thought he saw a rock where East Cub Island was supposed to be and that it was possibly small enough to be awash at high tide.

The following day we were dropped on a little island in Long Island Sound, while the *Fort Charles* proceeded to Great Whale River. Here we observed numerous large outcrops of limestone containing formations of what were possibly algae secretions.

The *Fort Charles* returned on August 7th. We learnt that the Albany Mission boat was out of order and could not help us finish our work. Brother Goulet and the three Indians were dropped at Fort George, and we arrived back in Moosonee on August 10th.

On August 13th we loaded our equipment and food in a Norseman aircraft and flew from Moose Factory to Bear Island. Unlike the other islands we had visited, all of the sand and gravel type, Bear Island was a mass of rock, which made it difficult to land equipment from the seaplane.

Bedrock was seen at only two of the points which were established during the summer. Bear Island, the first of these, less than three miles in length in a north-south direction and one mile wide, was an outcrop of hard slate. On the east side of the island the rock was cinnamon in colour, indicative of the presence of iron. A couple of faults were noted to be running in a north-south direction, as were the glacial striations and gouges. However, there was a plethora of shallow striations crisscrossing in every direction. The cleavage planes dipped about 10° to the north, the strike being very close to east-west. Heaps of boulders covered the bedrock at the southern end of the island.

Austin Airways Norseman—ready to leave Moose Factory for Bear Island, August 1947.

Bear Island, looking S.W. from 1,000 feet; South Bear Islands in the background.

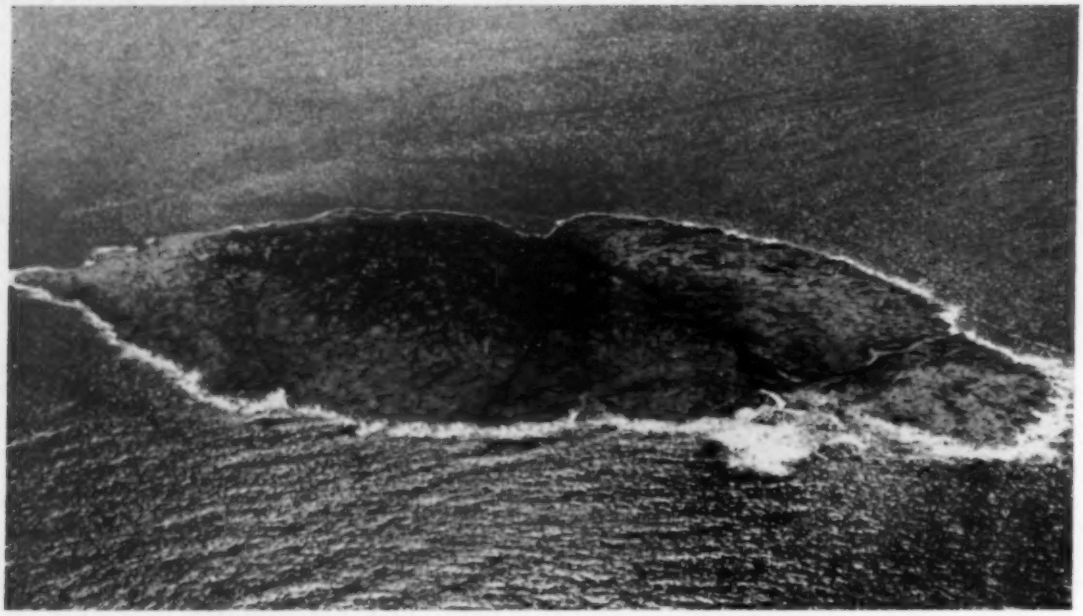
The highest of these deposits rose about fifty feet above the water level. About a quarter of the island was covered with moss and grass.* After a two-day squall the weather cleared and we observed a program of stars.

The plane came back for us and on August 19th we took off for Bare Island. We saw three polar bears on and around West Cub Island, another two on Sunday Island and one swimming in the sea. Flying over Sunday Island we gained the impression that it had well-defined layers of possibly limestone, dipping about 10° to the north. Arriving at the map position of Bare Island we saw nothing but water. We had also expected to be able to see East Cub Island from here, but could not. Continuing to fly east we sighted a small rock to the north. Having been on one rocky island and envisaging the possible difficulties of disembarking by aircraft, we were not anxious to try landing on another. However, since we had failed to see East Cub Island on a second trip, it seemed as though this was the only possible place to establish a point in this part of the Bay. Flying over the island we saw two polar bears on a rock measuring not more than a quarter of a mile long and two hundred feet wide. It was an outcrop of hard pink-and-white granite and rose dome-like to about thirty-five feet above the sea. There was a scant covering of grass and moss on top with a comparatively abundant supply of bake apple, which may have accounted for the presence of the bears. Round Island was the Indian name for this island—which we later decided was, in fact, Bare Island.

*Rock samples were collected and given to the Arctic Institute for Dr. Kranck. Botanical specimens were collected and given to the National Museum.

A view, looking northward, of gouges in the slate of Bear Island.

The camp erected on the sheer rock of Bear Island in stormy weather.



Bare Island (obviously!), viewed southward from 1,000 feet.

Owing to shelving rock we had a little trouble unloading as the aircraft pounded, though only lightly, on the bottom. Later, having decided to build a lean-to shelter, we armed ourselves and set off in search of driftwood over the mound. Commenting on how amazing it was that we had not seen either of the bears, we suddenly came upon one lying in the only patch of grass on the island about forty feet from us. Deciding to investigate our persons he arose and started lumbering towards us. I managed to put three bullets into his head. We then gathered some driftwood, put up our lean-to and observed a star program. During the evening the other bear was seen out in the water, preferring to observe from afar.

The next morning a storm descended. It blew, rained and hailed and then we were engulfed in fog. August 21st was another rare, calm day and the plane came to pick us up. On the trip out from Fort George to Bare Island the pilot had looked in vain for East Cub Island; returning from Bare Island

Don Coombs with the polar bear whose curiosity concerning visitors to Bare Island has brought it to an untimely end.

to Fort George we again saw no evidence of anything which could be described as an island, and so we concluded that our work in James Bay was completed. We returned to Moose Factory via Fort George and Rupert House.

Although we had fulfilled our objective for the summer, there was work which could be done west of Moosonee in the muskeg, so on August 23rd, we were flown to Point 1, named Manning Lake. The land hereabouts was half muskeg and half woods. Trees seen were predominantly spruce with some cedar, balsam fir, alder and silver birch. The ground did not seem to rise more than ten feet and the area was covered with lakes.

We picked the highest part of the shore for our camp; before equipment could be landed, we had to clear a living space out of the alder jungle. The land here was one foot above the lake. From barren rocks we had been transported to comparatively tropical growth. On August 24th, for the first time that summer, we observed a star program without wearing parkas and flying boots. The water in the lake was even warm enough for swimming.

Flying to the map position of Point 2 we found two fairly large lakes considered too dangerous for a seaplane landing. A few miles to the southeast we landed on the remaining lake of sufficient size in this area. From the air it gave an appearance of depth due, as we soon found out, to the water holding in suspension fine black decayed vegetable matter. In reality it was very shallow, the aircraft touching bottom a couple of times while taxiing in the middle of the lake.

At this point the surrounding land did not seem to rise more than a foot above the lake. There were numerous lakes and ponds, the area being predominantly muskeg. Small patches of woods consisted of spruce and tamarack; also willow, alder and dwarf birch were found beside the water.

We returned to Moose Factory on August 29th having completed our last point of the summer.

It was arranged that Manning and I should fly from Kapuskasing in one of the R.C.A.F.'s Mitchell aircraft to do the low-level photography of our points. After two abortive attempts it was planned that we should fly instead from Ottawa to James Bay in a Lancaster. On September 25th we left at 8 a.m. and returned at 7.30 p.m., flying over James Bay and southern Hudson's Bay. Owing to snow storms I was unable to photograph Bear Island on this trip but Manning did this for me on a second trip the following week, thus completing the summer's field-work.

From barren rocks to the 'tropics'; the camp under cedar trees at Point 1, Manning Lake, an area of muskeg and woods.

The Cairngorms

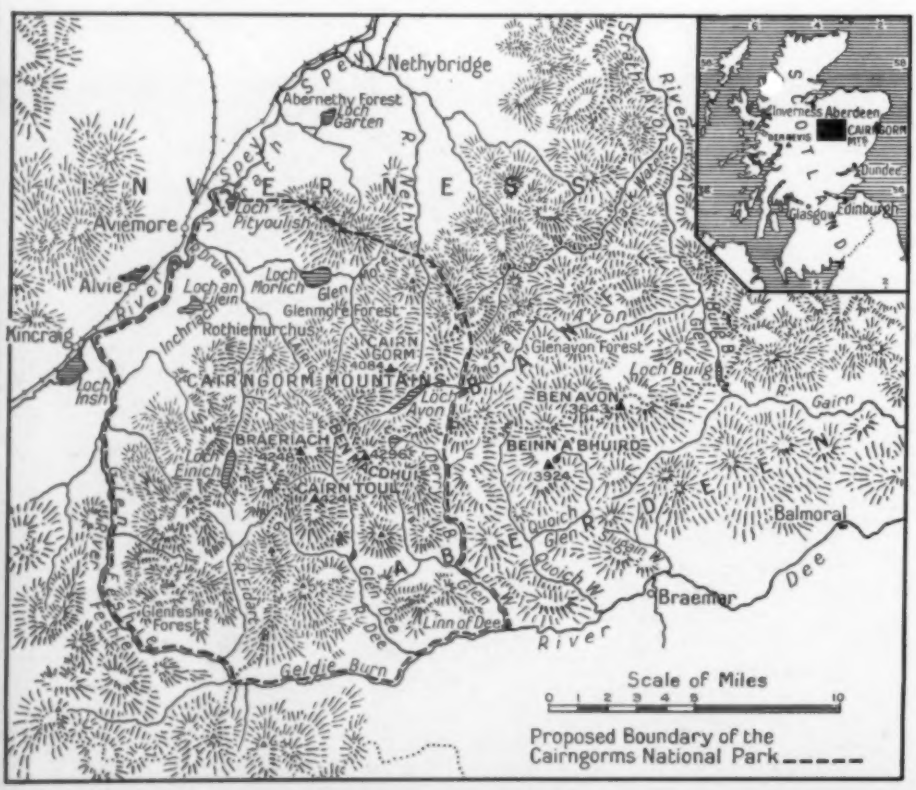
by V. A. FIRSOFF

Photographs by the author

SCOTLAND'S Cairngorm Mountains, lying west of Aberdeen, are contained between the valley of the Spey (i.e., Strathspey) in the northwest; the Glens Feshie, Geldie and Dee in the west and south; Gleann an t'Slugain and Loch and Glen Builg in the east; and the Avon from the confluence with the Builg to the fords on the Lairig an Lui track in the northeast. The rest of the northeastern boundary is less well marked by this track to the Nethy where the hills spill over into the high moors and forests of Abernethy. For the sake of convenience a range of slaty heights between Cairn Gorm and Pityoulish is usually included in the system and thus its boundary is brought back to the Spey. The total area above the 2,000-foot contour is over 150 square miles, and contains some of the wildest and loneliest country in the British Isles.

The ancient drovers' tracks or "passes", following natural concatenations of glens, the Lairig Ghru and the Lairig an Lui, divide the system into three distinct parts: the Western, the Central and the Eastern Cairngorms. Each of these is compactly based on a residuary portion of the Tableland, so that little climbing is necessary to visit all its summits once the 3,500-foot contour has been reached. Ben Macdhui, the second highest mountain of Britain, measures 4,296 feet and heads the list of the Cairngorm peaks, but it has a close rival in Braeriach (4,248 ft.), facing it across the Lairig Ghru. These two hills, together with Cairn Toul (4,241 ft.), Cairn Gorm (4,084 ft.), Beinn a'Bhuird (3,924 ft.) and Ben Avon (3,843 ft.), are jointly known as the "Six Cairngorms" and have all been climbed in one day by some sturdy spirits equipped with even sturdier legs.

The Cairngorms are the walker's rather than the climber's mountains. Their problems are those of distance, orientation and climate. But the climber has a choice of rocky features among the extensive arrays of corries that fringe the main *bens* (peaks), and to a less extent on the crags bounding some of the glens, such as the Lairig Ghru, Gleann Einich and Glen Avon. Most of the climbs are of the face and gully type, with an occasional buttress thrown in, some involving over 600 feet of continuous climbing which is often dangerous owing to the abundance of loose debris and the paucity of good belays or stances.



Canadian Geographical Journal map

There are hardly any well-developed ridges, let alone *arêtes*, save for the short *fiacails* (ridges) that separate the adjoining corries. Of these the Fiacail Ridge of Cairn Gorm is the most notable example.

Lately a good deal of rock-climbing has been done in the Cairngorms, though the palm of popularity belongs to snow-scrambling, for which these hills offer excellent opportunities. When the debris is solidly plastered over with snow, even the dangerous gully climbs become relatively safe, while a judiciously handled ice-axe always provides an anchorage for the rope (the British mountaineering code frowns on the use of *pitons*).

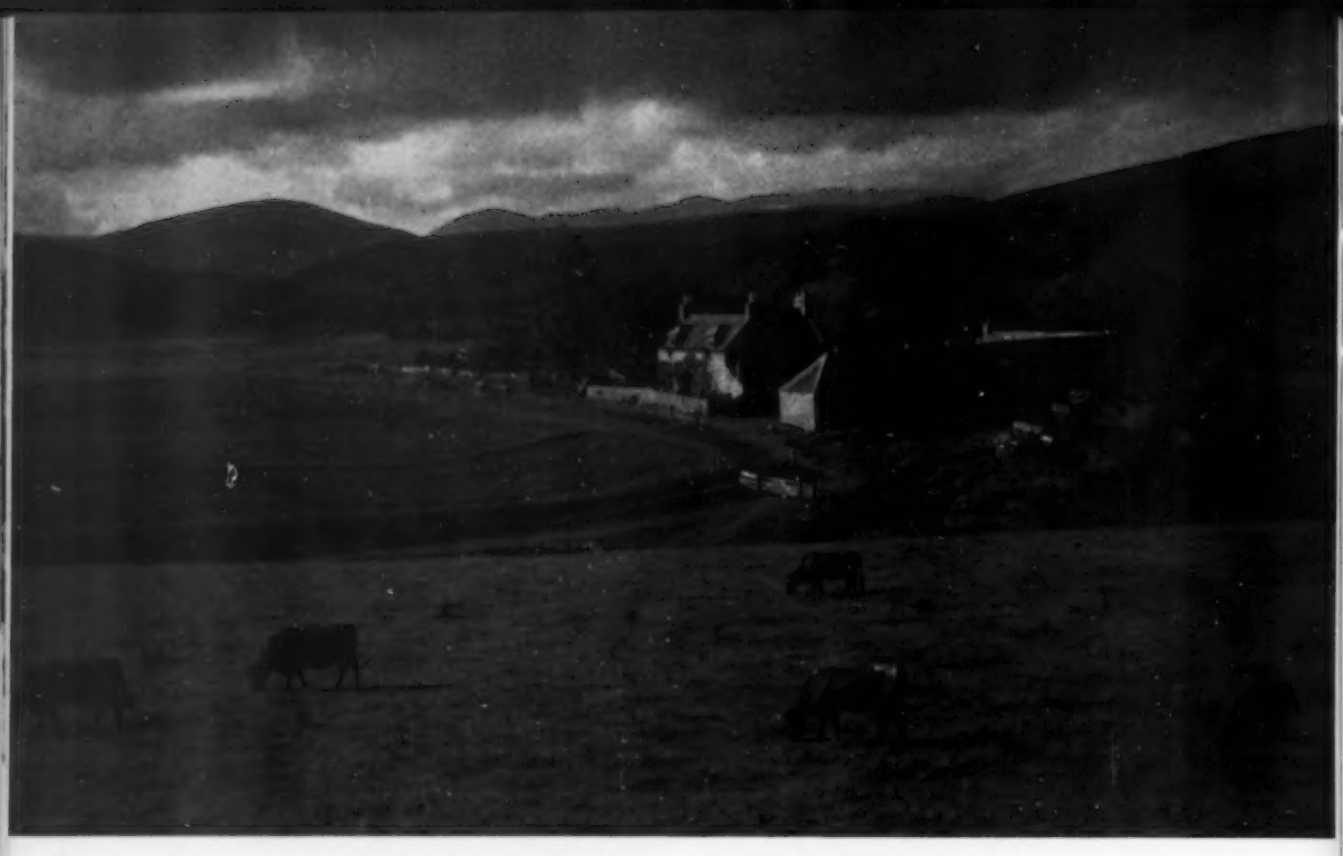
Winter spells of great severity, with as much as 50° F. of frost, occur in the Cairngorms. Two years ago the stream supplying our water tanks remained frozen solid for four months. The snowfalls, too, are often heavy, though a continuous snow-cover cannot maintain itself for long on the hills owing to the strength and persistence of winds. In midwinter, when the hours of daylight are short and Atlantic gales range freely over the exposed heights, the snows of the Cairngorms do not attract many skiers. But the popularity of spring ski-ing is on the upgrade, especially since the war, during which many young lads learnt to ski in the Lovat Scouts (who received part of their training in the Canadian Rockies) or some other unit, with the result that ski-ing ceased to be the preserve of moneyed visitors and reached the crofter's cot.

The gentle undulating skylines of the Cairngorms tend to belie the hills. They conceal many a rugged precipice and some of the noblest mountain scenery this country has to offer. Black and forbidding, the jagged granite falls away towards the peacock-eye lochs: the majestic sweep of buttress, crag and slab, exaggerated in magnitude and steepness by the contrast with the gentle declivities of the High Tops, leads the eye to the grey desolation of the screes where deer graze on some secluded meadow and foaming streams meander down to the deep glen. When the grey wind of the west sweeps the dun heights, when the sheets of

The Rough Corrie of Braeriach as seen from Angel's Peak.

water glisten eerily among the ice-polished knolls, and the glens open in dark blue gaps beneath the rolling canopy of cloud, you will find yourself amidst a primeval solitude, unexpected in this crowded "island".

The villages of the approaches are thirty and more miles apart and a long day's trek is needed to reach the nearest inhabited place. The hills have no huts or shelters, except a few derelict bothies, and should ill weather overtake you on the High Tops your chances of survival will not be too great. In winter the climate is subarctic. The blue (or white) hare, the ptarmigan, the creeping azalea, the dwarf willows and the purple saxifrage, denizens of the Arctic who have stayed behind after the departure of the glaciers, are still at home there. Today the red and roe are the only two species of deer found in Scotland, but until the thirteenth century reindeer used to roam her hills and attempts are now being made to reintroduce them from Sweden.



The valley of the Avon, cradled amidst the Cairngorms.

Glen Derry at sunset; the inclination of the trees indicates the prevalence of southwesterly winds.

The large carnivores are extinct, but the wild cat, the badger and the fox are fairly common. Among the birds of prey the golden eagle holds pride of place and is by no means an unusual sight in the hills.

During and after the war the axe made terrible inroads into the Cairngorm timber, which was called upon to replace the lost Scandinavian sources of supply. Much of the felling, particularly in Glen Feshie, was done by the Canadian Forestry Corps and many Newfoundlanders were at work elsewhere. When I first saw Rothiemurchus it was a uniform expanse of green stretching from the Spey all the way to Braeriach. Today it has shrunk to half that size. The Glenmore Forest is but a shadow of its former self. Gone, too, are the woods of Inchriach and Glen Feshie, save for the grove of Caledonian firs in the narrow upper part of the glen. Deeside has fared better. There were no fellings among the remnants of the Old Caledonian Forest that still crowd sparsely into the recesses of Gleann Quoich and Dubh Ghleann at the foot of Beinn a'Bhuird. The Derry is untouched.

Yet, given time and a little care, these forests will recover as they did after the Napoleonic Wars and World War I (when some Canadian troops were at work in Glen More). There are, however, certain obstacles to overcome: the deer eat up every sapling pine they come across, and rabbits, too, are great enemies of the young trees. The obvious remedy is proper fencing, but large and backward areas are involved and private proprietors can seldom afford the expense. The Forestry Commission, nevertheless, has the reafforestation scheme well in hand and considerable areas have been fenced and replanted. Self-seeding from the old acclimatized stock is the basis of these plans, especially in the less accessible mountain areas; elsewhere it is combined with planting. In addition to the Scots fir, the Canadian Sitka spruce, the Douglas fir, the Norway spruce and the larch have been successfully used; the latter and the Douglas fir have been well acclimatized for 150 years or so. The five-needled pines and the creeping mountain pine, on the other hand, do not appear to thrive in Scottish conditions, though the redwoods are doing well on the west coast. The present policy of the Foresty Commission in the district is to mix the species in order to produce an aesthetically pleasing effect. Some deciduous trees, mainly beech and birch, are likewise included in the forests-to-be.

Loch Morlich and (beyond) the northern corries of Cairn Gorm.

Geologically, the Cairngorms form part of the Grampian system which straddles the Scottish Highlands from the southwest to the northeast, the direction corresponding to the original plications of the Old Caledonian ranges. These mighty Silurian mountains, which must in their prime have rivalled the Himalayas, have been completely levelled by erosion, so that the present hills, carved out of their base, pay scant respect to the strike of the strata. Yet, while the ancient peaks have gone without trace, the trunk valleys of today still reflect their

drainage system. This may seem odd at first sight, but is readily understood if we reflect that the streams would have continued in their old beds after the disappearance of the mountains and would, upon the subsequent uplift of the land, have cut deeper and deeper into the resulting plateau until they broke it up into fragmentary heights.

Not all the chapters in the long history of the Scottish hills are easy to decipher. The land must have been depressed and upraised more than once; but in the more recent geological past two periods of quiescence followed by uplift can easily be discerned. During each of these extensive peneplanation took place, so that the pre-existing heights were reduced to nearly level ground. These two levels, known after Sir Archibald Geikie as the High Plateau and the Highland Tableland, and corresponding to the average altitudes of 3,000 and 4,000 feet respectively, are still apparent in the configuration of the Highland monadnocks.

The Cairngorms approximate to the latter level and there are no other British hills on which the story of the past is so plainly writ. Viewed from the distance, their skylines show a remarkable continuity, conforming to the same asymptotic plane; and, however steep the containing sidings, the summits, with the exception of a few minor heights, are very nearly flat—little more than the highest points of an upland. In the oft-quoted words of Sir Archibald Geikie, "there is more level ground on the tops of these mountains than in the valleys below". One of the hills above Braemar is called Beinn a'Bhuird, which is the Gaelic for "Table Mountain"; but this name could with justice be applied to most of the Cairngorms.

Being remnants of a denuded tableland, the Cairngorms present no clear-cut system of ranges but sprawl in an amorphous mass into three counties, Inverness, Aberdeen and Banff. Water and glacial erosion has broken up the plateau into segments, while the rock-bound cauldrons of the corries have encroached deep on their sides, producing a typical example of the so-called "biscuit-board topography", well exemplified in Greenland and some other arctic regions. Today there are no eternal snows in the Cairngorms, though one or two snowfields have never been known within living memory to disappear entirely and many other wreaths survive well into the summer. Yet the process of corrie-building has not ceased. The snows are still gnawing their way into the mountain-sides and the debris, dislodged from above, slides over them out into the valley where it is deposited in a mound that often contains a tarn. The past glaciation has been, and the present snow-fields are, most extensive on the northeast side of the hills; accordingly, it is here that we find the most rugged rock scarps, while the western slopes have a gentler character and display only one rock-bound corrie.

The geological and topographical unity

The large slab in the main face of Coire Bhrochaine, Braeriach.

Comyns Castle, on the shore of Loch an Eilein.

of the Cairngorms is based on the fact that they have been carved out of the same granite laccolith, intruded into the Old Slate series. This laccolith has been exposed by denudation and, owing to the superior toughness of granite, has resisted further reduction in height more successfully than the later sedimentary formations. It has thus been able to retain the level of the Highland Tableland, rising about 1,000 feet above the surrounding schist heights and more than 3,000 feet above the *straths* of the Spey and the Dee.

The Cairngorm granite is predominantly coarse-grained with reddish feldspar and little mica, which gives a characteristic red tinge to the screes and is reflected in many place-names (e.g., Corrie of the Red Spouts). At one time, in fact, the hills were known as Monadh Ruadh, or Red Mountains, and only in the last century did they "change colour"; the present name is derived from that of Cairn Gorm (properly A'Ch'arn Guirm), which is the Gaelic for "Blue Hill" and originally designated only one peak that is still so called and forms a prominent feature of the northern skyline.

Owing to their scenic and geological interest, the Cairngorms are one of the five Scottish areas selected for National Parks. The Cairngorms National Park is expected to cover 180 square miles, comprising the wooded tracts of Speyside that shelter several drift lakes, but excluding the Eastern Cairngorms beyond the Lairig an Lui. So far no final delimitation has been made and it will be some time before the park solidifies to fact from the somewhat tenuous mass of reports and deliberations—but this it certainly will.

A National Forest Park was opened in 1948 in the Glenmore property of the Forestry Commission, which is the only part of the proposed park owned by the Nation. The total area of this park is 12,500 acres, of which 4,000 acres are classed as plantable and 1,600 acres are actually under trees; public access to this part is restricted, but the rest is open to all. A special camping site is provided, this being considered necessary in view of the highly inflammable nature of the juniper heaths and the peaty subsoils. The Commission lodge in Glen More is now in the hands of the Central Council of Physical Recreation and is used for mountaineering courses and various educational purposes.

When the National Park is established, Glenmore Park will be merged into it as one of the cultivated areas foreseen in the charter. Special Nature Reserves are also to be created, so that while the number of human visitors may be expected to increase greatly the wild life, too, will be encouraged to thrive and multiply amidst the hills and valleys of the Cairngorms.

Above:—The crab fleet in its home port at Masset, Queen Charlotte Islands.

Below:—On decks piled high with crab traps, crews prepare their ships for the season's first trip.

Trapping Crabs off the Queen Charlottes

by HARRY SEAMAN

Photographs by the author except where otherwise credited

ACCORDING to Bob Wylie, Captain of the *Argonaut Hill*, 52-foot crab boat out of Masset, Queen Charlotte Islands, we were "in a bit of slop". Perhaps it was just that, but at the height of the pitch and toss it was impossible to walk across the galley without hanging on. The lively motion of the boat created the impression that to lose a handhold would be to enter into the category of the human tennis ball, to be volleyed from bulkhead to bulkhead.

Although skipper Bob was still in his early twenties, he had fished the waters of the Queen Charlottes for a number of years and wasn't the kind to let a little choppy water upset the routine of his boat. He was going to have supper if he had to cook it himself. As it turned out, that is just what happened. It was only fried liver and boiled potatoes but, under the circumstances, cooking that much without accident seemed like a minor miracle.

All day we had been out on Hecate Strait, a stretch of water that has the reputation of being able to kick up some of the dirtiest seas on the British Columbia coast,especially during the fall and winter. But on May 2nd it was as calm as the proverbial millpond. As soon as we rounded Rose Spit at the northeast tip of Graham Island and headed westward for Masset Inlet, however, the weather changed. A westerly wind was whipping up a line of breakers that extended for about two and a half miles from a gravel islet at the end of the wet spit to the dry sands of Rose Point. As the wind freshened and piled the water steep against the tide setting in the opposite direction, the *Argonaut* began to live up to the reputation V-bottom boats have for being lively in a chop. Behind us and across the spit the other two boats of the crab fleet, the *Tow Hill* and *Diamond B*, looked like white check-marks on a smooth piece of blueprint.

In the morning gloom of four o'clock (standard time) the crab fleet had slipped its lines from the floats at New Masset and scudded out of Masset Sound with a five-knot tide boosting it out to the broad expanse of Dixon Entrance. Gravel bars and sand banks make the mouth of the sound an uncomfortable patch of water for steamboat men but the crab-boat men cut their crafts across the shoal water with no more concern than jaywalkers in a country village. On a clear day the tips of snow-capped Alaskan mountains can be seen far to the north on the other side of Dixon Entrance, but rain showers and clouds shut them out for us.

The fleet's course was now eastward and we were actually cutting across the mouth of McIntyre Bay. This gently curved bight, 23½ miles from Masset Inlet to Rose Point, is backed by a series of crescent beaches, including two very large sand beaches which are the location of the only commercial razor-clam beds in the Commonwealth. Dividing these is a 500-foot, tree-crowned, sky-jutting formation faced with a 400-foot cliff of columnar rock. Sam Simpson's 53-foot *Tow Hill*, veteran of the crab fleet, was named after this lone height-of-land in McIntyre Bay.

From the end of the trees on Rose Point a dry spit of sand runs northward for about 2½ miles. Between the dry spit and the wet one that continues on for another 2½ miles in north-northeasterly direction there is a spot where small boats sometimes sneak across if the tide is high enough and the weather right.

As we drew past the end of the dry spit and moved along parallel to the line of breakers marking the wet one, the *Tow Hill*

was ahead and inside the course of the *Argonaut Hill*. Suddenly we saw the other boat veer outward and a moment later skipper Eugene's voice announced over the radio-telephone that the fathom-meter had shown only ten feet of water under the *Tow Hill's* keel.

Rounding the gravel islet to enter Hecate Strait, we could see the white water of a tide rip that marked the edge of the shoal that extended northeastward for another three miles. When his boat was in the middle of the rip, Eugene again spoke over the radio-telephone, reporting only a six-foot margin of safety. It was almost a zero low tide at the time, but if we had passed over the same spot at 1.30 the next morning there would have been more than thirty feet of water there.

Once in Hecate Strait the three crab boats went their separate ways and at 8.20 we spotted the orange and black flags marking the northern end of one of the *Argonaut's* trap-lines. However, work did not start until Bill Wylie brought the boat alongside the flag marker at the southern end of the line. Then we were heading into the tide, this being advisable when pulling crab traps with power equipment.

Although Bob Wylie is the skipper of the *Argonaut*, his partner in the boat, brother Bill, handles the controls while they are at sea. While actually "fishing", Bob handles the exacting job of hauling the traps. He stands in the starboard waist of the boat holding a long pole with a metal "bo-peep" crook

Canadian Geographical Journal map

The Canadian fish patrol boat Laurier, *photographed as it passed the* Argonaut Hill *in a "bit of slop" off Rose Spit.*

on the end. When the two buoys, resembling a giant black firecracker and a huge red toy top, are close enough, Bob hooks the short line that joins them and yards the rigging aboard. With the main line in his hand, he flips a loop over a snatch block hanging slightly overboard from a short boom and pulls enough slack to throw two or three turns around a powered niggerhead. To do this job properly plenty of speed and energy are required, because the hauling line should be secured to the power equipment before the moving boat is directly over the trap and all the slack is out of the line. Otherwise it is a back-breaking job to pull line when the trap is being towed behind.

While Bob Wylie peeled the tarred three-eighth-inch hauling line off the whirling niggerhead, the third member of the crew, Norman Burton, tossed the marker buoys overboard and paid out the manila. As soon as the drum-shaped trap came above the boat's rail, Bob grabbed it with his right hand and swung it aboard, and slipped the line free of the niggerhead with his left hand. In landing the trap on the removable stand, he always made sure the door was topside.

Bob and Norman then flipped open the trap, tossed the legal-size crabs into the live tanks, threw any small ones overboard, cleaned the old bait out of the small perforated box that hung between the two funnel-like openings in the sides of the trap, put in new bait, secured the door, and the gear was ready for another fifteen-fathom trip to the sandy bottom. It took its plunge when Norman gave it a push as Bob stuck his hook out for the next buoyline.

The Wylie boys reckon that when things are going right it should not take more than sixty seconds to haul, empty and rebait a trap. With the gear spaced seventy-five to a hundred yards apart, that is about all the time there is to spare. This was the first full-scale trap lift of the season and Norman Burton's introduction to the crab game, but Bill Wylie seldom had to circle or pass up a crab trap because the deck crew was not ready for the next one.

As it was early in the season, the traps weren't overheavy with crabs. According to theories of the men that fish for them, crabs have to be "fed" for a while before they gather along the trap-line in sufficient numbers to make crabbing a successful commercial venture. Actually, the crabs get precious little to eat in this type of crab trap; all they get is the smell, which seems to be what attracts them. All bait is placed securely in the perforated bait-box, and it

The Tow Hill, which "established a local record for one-trip hauls when its crew collected 5,100 crabs one day in 1949".

Skipper Bob Wylie of the Argonaut Hill *gets his hook on a buoy-line.*

takes an extra strong or smart crab to chisel a meal out of that.

Fresh razor clams are considered tops in the bait field, but they cost sixteen cents a pound at Masset (twenty-eight cents a pound wholesale at Seattle). The canned offal of the razor clams seems to be the next best thing. In 1950 a case of forty-eight half-pound tins cost the boys $7.50, an increase of $2.50 over the previous year. Before the canned goods go into the bait-boxes, small holes are punched in one end of the tins so that enough juice can escape to tantalize the loitering crabs.

Crabs aren't the only things that get corralled in the traps. Sometimes a wolf fish's nose leads him into captivity and occasionally a devilfish gets a free ride to the surface. Young halibut, too, are caught occasionally while trying to collect an unearned meal. The day I was aboard, a number of starfish, flatfish and bullheads were hauled in with the crabs. The starfish went back into the sea; the rest went into bait-boxes. No crab less than six and a half inches in carapace width is taken; this automatically eliminates females, as they rarely attain the size of six inches. High boat on the trip had only eighty crabs in its tanks but there have been times when almost half that number was taken in a single trap.

Last year the cannery paid nine cents a pound for live crabs, but the average weight of the ocean crawlers ran so consistently to two pounds that the fishermen referred to the price as eighteen cents a crab. The previous year, during the month of August, the *Argonaut Hill* delivered 43,000 crabs to the cannery and the *Tow Hill* had a catch of 41,000. The latter established a local record for one-trip hauls when its crew collected 5,100 crabs one day in 1949.

The cannery makes its own crab traps at an estimated cost of twenty dollars each. With the crab boats requiring 300 traps apiece, and 100 more for spares, this phase of the industry alone represents an outlay of $20,000. During the middle of the season when the catches in the traps are heavy and the hauling lines are beginning to show wear, a considerable number of traps are lost. Occasionally a heavy blow will stir up the sea-bottom and load the traps down with sand so that the hauling lines won't stand the strain of lifting them.

One-fifth of the fishermen's catch goes to the cannery for the use of the traps, a second fifth is paid to the boat. After operating expenses, including food, are taken out, the crew splits the balance equally.

The crab industry was first established on the Queen Charlotte Islands in 1919 by Eugene Simpson, grandfather of the present skipper of the *Tow Hill*. Originally the cannery was located at Naden Harbour, west of Masset on the north coast of Graham Island. For years the waters adjacent to the cannery supplied the fishery's needs; but by 1939 the crab population of Naden Harbour showed signs of dwindling. Existence of the Pacific edible crab (*Cancer magister Dana*) in McIntyre Bay, west of Rose Spit and Hecate Strait south of the Spit, had been known for some time; but these waters are often

whipped by sudden storms so that able sea boats and good gear are required.

When the crabs disappeared from Naden Harbour, the cannery was forced to move too, and Eugene Simpson and his son, Sam, set the plant up at Masset in 1940. From 1942 to 1946 very few crabs were handled by the cannery, but it was kept in partial operation by a salmon-packing contract with the Prince Rupert Fishermen's Co-operative Association and by the canning of razor clams provided by the Masset Co-operative.

Following the death of his father, Sam Simpson stepped into the guiding position of the Queen Charlotte Canners Limited and, after considerable research, he and Alex Wylie built a boat especially designed to meet the requirements of crab-fishing in Dixon Entrance and Hecate Strait. It turned out to be a 52-foot V-bottom, seine-type craft powered with an 80 h.p. diesel engine. Most striking features of the boat were the large metal live tanks occupying the hold and equipped with heavy-duty pumps that change the sea-water in them every seven minutes when crabs are aboard.

At the controls of the *Tow Hill*, Sam Simpson made a number of "prospecting" trips along the north and east coasts of Graham Island in 1946. The following season he increased his traps to 400 and took his seventeen-year-old son, Eugene, along to learn the fishing end of the business. What Sam found that year convinced him that two more boats, similar to the *Tow Hill*, operating in Dixon Entrance and Hecate Strait, could just about keep the cannery going at top capacity between April and October. In the early winter months, when the fleet would be forced off the fishing grounds by storms, small boats equipped with ring traps could top off the season by working the sheltered waters of Naden Harbour. January and February would be idle months but during March, April, May and June, razor clams would be available for packing.

In 1948, first year of operation under the new set-up, production rose to a satisfactory level, and in 1949, Queen Charlotte Canners

Eying its contents speculatively, Bob hauls a crab trap aboard.

Part of the day's catch in the ship's live tanks.

SCENES AT THE QUEEN CHARLOTTE CANNERS, LIMITED

(Photographs by Richard Harrington)

Left:—The live crabs are placed in fresh-sea-water holding-wells, which can accommodate thousands of them at a time.

Near right:—The crabs are gutted and washed as soon as possible to prevent discolouration.

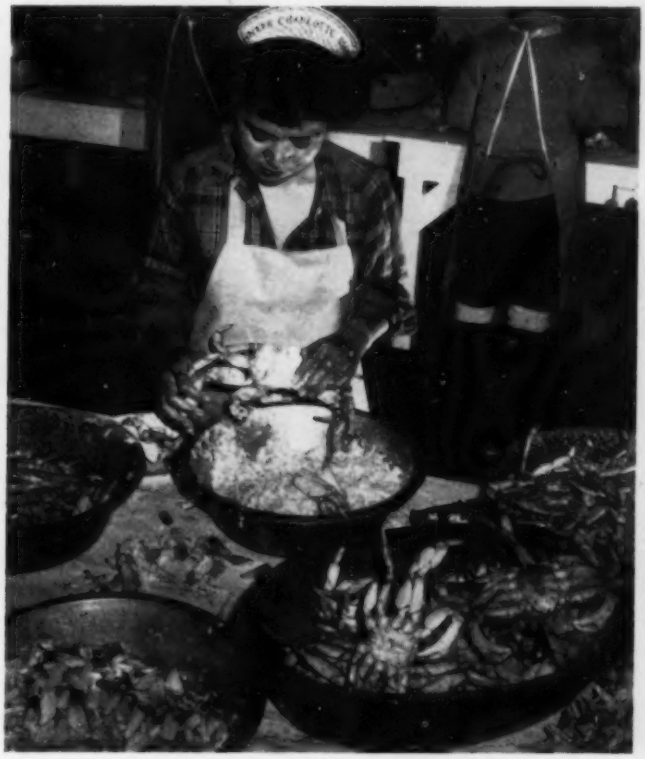
Far right:—Hairnet, oilskin apron and gumboots are what the well-dressed Indian girl wears as she removes meat from the crabs.

had a carry-over for the first time in its history. Last year the demand by crab-men on the American side for fresh razor clams grew so great that the Masset Co-operative found it more profitable to sell its product in the bait market than to have it canned. However, scientists are now doing research on a synthetic crab-bait, and if they produce the desired results the delectable razor clam will again become a palate-tickler for humans instead of a come-on for the crab.

Masset, with its new thirty-thousand-dollar cannery and modern fleet of crab boats, is considered the centre of Canada's crab-canning industry. But one of the situations that may eventually present the Masset crab-men with a major difficulty arises from the strange fact that the Queen Charlotte Islands are surrounded by international waters. Any foreign boat can approach within three miles of the Islands' coast and fish, provided the crew observes halibut regulations, which are governed by an international commission.

Reports of investigations carried out by the Fisheries Research Board of Canada are available to the public, and it was not

The crabs are steamed for four minutes in this perforated steam-kettle and then washed again before going to the cleaning table.



altogether unexpected when several large American crab boats were sighted at work in Dixon Entrance and Hecate Strait in 1949. The *Messenger*, one of the American boats contacted by a Canadian fisheries patrol boat in November of that year, reported that it had delivered 25,000 pounds of crabs to Anacortes on its previous trip to the home port. In 1950 the Pacific Pearl Company of Ketchikan, Alaska, had four large boats fishing for crabs off the coast of the Queen Charlottes. One of these, picked up by a Canadian patrol boat for anchoring inside the three-mile limit, was fined $800 for infraction of Canadian Customs regulations.

Just why the waters of Hecate Strait and Queen Charlotte Sound (south of the imaginary line that runs from the vicinity of Portland Canal on the mainland to a point three miles off the northwest tip of the Queen Charlottes, and east of the southern tip of the Islands and northern end of Vancouver Island) are not considered Canadian waters is a mystery to many. Local crab-men fear that 'foreign' depletion of their fishing grounds may force Masset out of the role of Canada's top crab-canning centre.

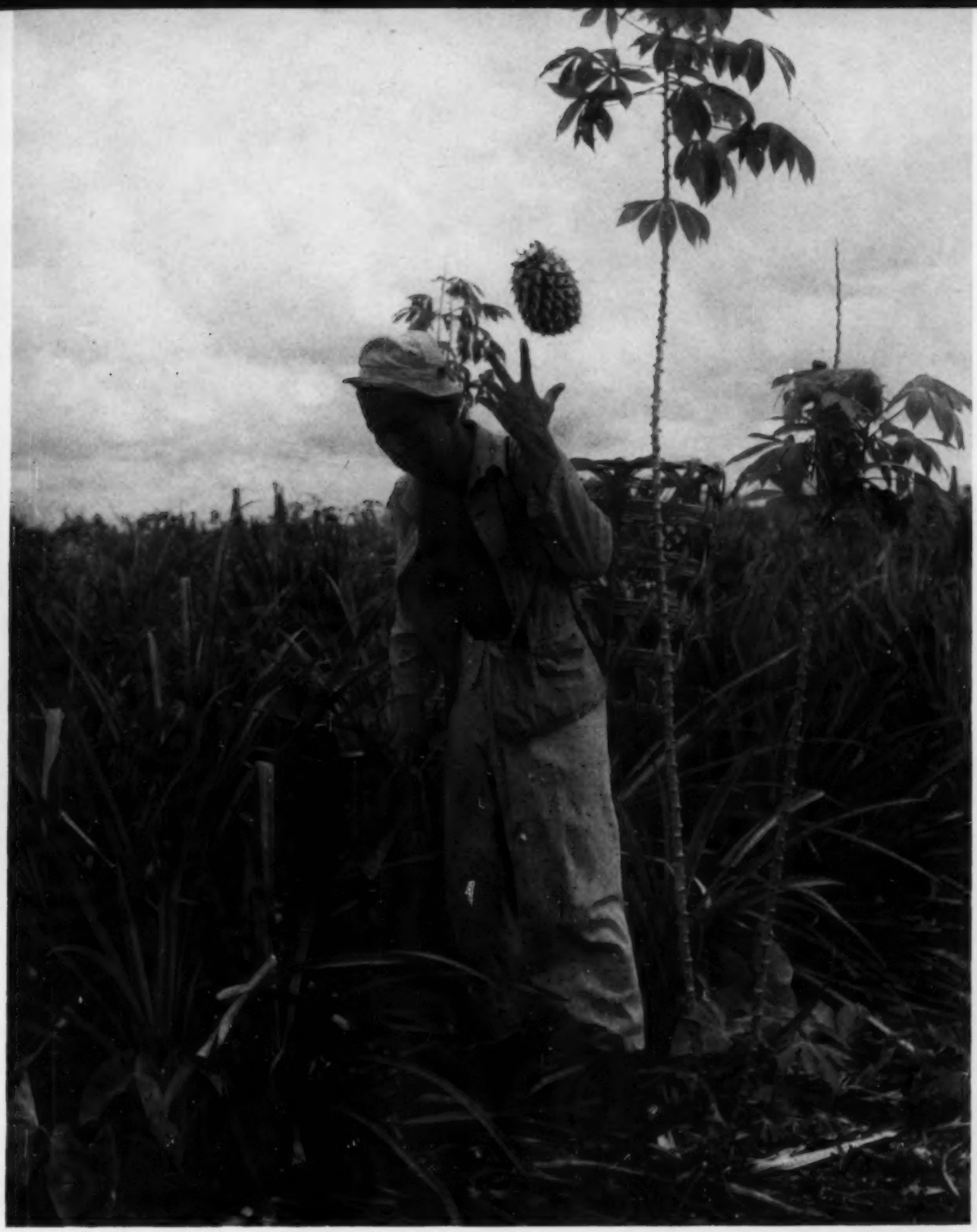
One girl adds the correct amount of salt to each can while another places circles of white parchment-paper over the red and white claw meat.

Pineapple-Growing in Malaya

U.K. Information Office photograph

While most people know that the Hawaiian Islands export large quantities of pineapples, both raw and processed, many may not be aware that the growing and canning of pineapples represents a secondary, but not inconsiderable, industry of Malaya. Indeed, about ninety per cent of the tinned pineapple consumed in Great Britain before World War II came from Malaya—some 3,000,000 cases per annum. During the first year of postwar production, however, the number of cases fell to 100,000, the amount of land under cultivation having been reduced from 40,000 to 4,000 acres. Three and half years of Japanese neglect and destruction had left the industry with problems that required for their ultimate solution the combined efforts of good administration, efficient research and the infinite capacity of the Malaya Chinese for hard work.

Above:—Clearing an irrigation ditch through the peat of a pineapple field. Left:—Every member of a family of pineapple growers does his or her full share of the work—and none labours harder than the womenfolk.



Among other difficulties experienced by the pineapple industry is that of finding suitable new land for cultivation; large crops were grown prewar in the Kota Tinggi area of Johore, but they have drained the soil of all fertility. Given time, however, the various handicaps will be overcome. Malaya, like other countries, is working hard to increase her dollar exports: in 1948 $133,257-worth of canned pineapple was sold to Canada and it is believed that this amount can be increased from year to year as the industry gradually re-establishes itself on modern and progressive lines. Above:— The harvester works with uncanny speed, flinging each freshly severed and trimmed pineapple with practised skill into the basket on his back. The tall sprouts beside this Chinese lad are young papaya trees.

Right:—In the midst of their own particular plots pineapple workers (exclusively Chinese) live in isolated dwellings which, although sturdily built of wood, are quite primitive. Below:—A small-holder and his wife enjoy their midday meal while a neighbour takes charge of baby. Rice provides the staple diet, but tapioca or noodles (mee) sometimes take its place; vegetables, chicken, eggs, pork or fish occasionally make the meal more appetizing. The baby will probably be fed on condensed milk.

Right, above:—After the pineapples have been harvested they are piled on the estate roadside to await transport to the canning factory. Here (right, below) they are peeled, sliced and canned on long wooden benches by white-clad workers. Although a biannual crop, the pineapples grown at present are capable of supplying the factories for only a few months of the year. It is, however, to be expected that as an increasing acreage of land is brought under cultivation this situation will improve with corresponding rapidity.

The Eskimos of East Greenland

by EJNAR MIKKELSEN

WHEN the gales are howling over the desolate coasts of East Greenland and the snow is drifting skywards, then the Eskimos crowd together in their small, stuffy huts and tell legends of long ago. One of these concerns a famous hunter who, returning from the west coast of Greenland where the view towards the east is barred by the hugh coastal mountains, became so overjoyed at seeing the sun rise over the watery horizon far to the east that his heart burst with happiness.

A legend only, but symbolic for the Eskimos of East Greenland, who came there about the fourteenth century after hundreds, or possibly thousands, of generations spent travelling from somewhere in Asia, across the Bering Strait, along the coasts of Alaska and Canada, following the chain of large but bleak Canadian islands until they saw Greenland over the icy wastes of Smith Sound. Eventually they reached Greenland and followed its coasts northwards and southwards until they came to East Greenland; there their long trek ended, the ice-bound ocean to the east stopping effectually all further travels; at long last the roving tribe of hardy and ingenious Eskimos had come to "Journey's End".

They found East Greenland to be a good country for them. The game on land, ice and in the ocean was plentiful, and wood from the Siberian forests was brought to them in large quantities by the polar current; here was everything an Eskimo desired and needed for living his frugal life. The tribe increased in size and, judging from the numerous remains of large hamlets and lonely huts found wheresoever man has since travelled on the coast, a great number of Eskimos must once have lived and thrived

Young Eskimo girls of East Greenland.

along the bleak but beautiful East Greenland coast, hunting seals, walrus and whales offshore, and reindeer, musk-oxen, hares and fowl on land.

But other, and more efficient, hunters were preying on the game of the ocean: the white men, who in large vessels hunted the enormous stock of whales and seals once found between Spitzbergen and East Greenland until they had exterminated the whale entirely and decimated the herds of seals which formerly had given the Eskimos their main supply of meat, skin and blubber. In consequence of this ruthless competition great hardship afflicted the Eskimos, who could not exist without the mammals of the ocean; and before historical times had dawned over East Greenland they had died out on the coast from Scoresby Sound and northward, leaving behind them an unwritten tale in the form of ruined hamlets, meat depots and graves; a woeful sight in a deso-

late country, an eloquent story of a once populous tribe.

The Eskimos living along the southeast coast of Greenland fared a little better, and when first met by white men (a Danish expedition in 1750) they were so numerous that the inhabitants of a single hamlet were said to be able to eat a whale in one day! But evacuated and ruined hamlets told the same sinister tale as farther north; the tribe had passed its zenith long ago and was fast decreasing. This became woefully apparent to subsequent Danish expeditions, which in 1829 found only 581 Eskimos living on the coast from Cape Farewell to about 65° N. lat., and in 1884 this handful of people had further decreased to 135 individuals.

That year, however, the last small remnant of the East Greenland Eskimos was found a little farther to the north, at Angmagssalik, where 413 hitherto unknown natives were fighting a losing battle for the right to exist; the large number of Eskimos once living along the huge East Greenland coast had thus dwindled to only 548 individuals in all.

This last-found Eskimo tribe had for generations existed in almost complete isolation with only very scanty or no knowledge about the presence of other Eskimos far to the south and on the west coast of Greenland; they lived as their forefathers had long, long ago—absolutely self-supporting, a Stone Age people, eking out a slender and precarious existence on what the hard and cruel country gave them.

Gustav Holm, who found these Eskimos, lived with them for a year and brought back with him a grim tale of their struggle for existence. Fishing had ceased some thirty or forty years before, and the stock of seals was yearly decreasing to such an extent that bitter starvation faced the tribe nearly every winter. He found that death by starvation was not infrequent and that the survivors were often compelled to eat the bodies of the deceased in order to save their own lives. Newborn infants were put out to die in days of scarcity, and old or infirm persons were left to shift for themselves on desolate skeries when the younger ones left the old hunting-grounds in quest of food. From information gathered by Gustav Holm, it is apparent that in the two years preceding his arrival about sixteen per cent of the population then living at Angmagssalik had died from starvation or its direct consequences.

The stone weapons of old were all the hunter had wherewith to slay seals, walrus and bears, and, although these were ingeniously made, the hunters were compelled to fight the beasts of the ocean at very close quarters in order to kill—and were consequently often killed themselves. Many a hunter failed to return from the chase to his woman and children, who then, as a rule, were doomed to die from starvation.

Suicide, for quite insufficient reasons, was frequent. So, too, was manslaughter, and as the unwritten laws of the old Eskimo communities demanded a life for every life taken, disastrous blood-feuds were the unavoidable result; thus the precarious state of the remaining Eskimos increased with each able-bodied hunter who died for one reason or another. The relatively high number of violent deaths from various causes was ruinous to the future existence of the tribe, and as each childbearing woman had only 1.6 children on an average, the recuperation of the tribe under the then existent conditions seemed to be out of the question: the Eskimos of Angmagssalik were apparently doomed to die out within comparatively few years.

Eskimos travelling by kayak and umiak (women's boat) in East Greenland waters.

Winter at Angmagssalik, East Greenland.

It must have been an incredibly hard and precarious existence which these Eskimos tried to stem in vain; and these starving and harassed people were further oppressed by the prevailing dread of a host of evil and cruel spirits, bent on doing human beings harm in every aspect of life.

The Danish Government, having sovereignty over Greenland, could not, however, allow this last little remnant of an Eskimo tribe, formerly so strong and ingenious, to suffer to the bitter end—to total extermination; and so it decided to bring into practice the same measures which had been tried out with marked success in West Greenland. Plans were drawn up for establishing a settlement under Danish administration at Angmagssalik as soon as possible, and simultaneously the district was to be declared a closed territory where nobody could go except with the consent of the Danish Government, so that the natives would have an opportunity to adapt themselves in peace to the new conditions of life about to begin.

A set of rules and regulations was drawn up for the management of the Settlement; this was based on experience gained during 200 years of working for the betterment of conditions among the Eskimos of West Greenland—but modified to suit the primitive East Greenlandic population.

The principal rules laid down that nothing should at first be sold in the government-controlled store which was not deemed absolutely necessary for building up the existence of the Eskimos of Angmagssalik on a new and firmer basis. All kinds of iron tools to replace the former Stone-Age implements were considered necessary and were consequently allowed to be sold to the natives at a very low price. So were hunting utensils, guns, ammunition and the like, but in the beginning the Eskimos had to do without cereals and sugar, of course utterly unknown before, and also without textiles and other imported commodities. The basic idea was that they should as long as possible live as they had done before, self-supporting in practically everything; but the Manager of the Settlement was, nevertheless, authorized to dole out necessary food in case of shortage,

The main settlement An

Dog teams are used for winter travelling.

thereby avoiding starvation and its dire consequences.

On the other hand, the Eskimos were not allowed to sell anything in the store which was deemed of vital importance to uphold their habitual mode of existence, such as blubber, a healthful food, also needed to heat and illuminate their huts; and sealskins could only be accepted by the Manager after he had satisfied himself that the seller had sufficient skins to supply himself and his family with clothing, tents and kayaks.

The prices of commodities allowed to be sold by the store were regulated yearly by the Greenland Department, and as they were low (often below cost-price) it goes without saying that the Settlement could not yield a surplus to the Government. That was, however, not the object, being regarded as a minor consideration provided the Eskimos of East Greenland could be saved.

The Angmagssalik Settlement was eventually established in 1894 with only 330 natives, as some eighty had disappeared for various reasons since 1884. The coast to the south of Angmagssalik had by that time become practically depopulated, and the 330 individuals at Angmagssalik were consequently the total of the Eskimo population of East Greenland—the nucleus on which it was hoped to rebuild the tribe.

A Danish administrator was sent out to Angmagssalik to help the natives to adapt themselves to the new conditions of life brought about by the establishment of the government-controlled Settlement, and at the same time a missionary took up his quarters amongst the forlorn people, hoping to convert them to the Christian faith and eradicate from their minds the dominant fear of evil spirits.

The establishment of the Settlement caused practically overnight a very great change in the lives of the Eskimos, the Stone-Age conditions of former days coming to a sudden end. The introduction of firearms made hunting far less dangerous than before, whereby the lives of many hunters were saved; and, as hunting with rifles proved far more productive, the standard of living improved considerably.

ettlement Angmagssalik.

Most of the Eskimo families in East Greenland have their own houses, but these tend to be small and overcrowded.

These safer and better conditions modified the high death-rate of both adults and children; and as the average number of children of each married woman gradually increased owing to improved conditions (from 1.6 in 1884 to 2.9 in 1944), the population grew steadily—and so fast that in 1948 it numbered about 1,500 individuals, almost five times as many as fifty years before.

As previously mentioned, it was forbidden to sell to the Eskimos imported commodities such as cereals, sugar, textiles and the like and, of course, intoxicating drinks; and only in days of dire necessity could the Manager give out crude cereals (rye flour) to tide over lean periods—fewer by far now than before owing to better hunting methods.

Above:—Exterior of an Eskimo home at Angmagssalik.

Left:—Interior of a house at Scoresby Sound, with three of its inmates posed amidst somewhat cluttered surroundings. The religious pictures on the wall bespeak vigorous missionary activity in this area.

In the course of time, however, the Eskimos, naturally enough, acquired a taste, and even a craving, for cereals and other imported foodstuffs. By 1910 conditions had improved so greatly that it was deemed justifiable to modify the strict regulations governing the sale of imported commodities; and in 1916 all restrictions were waived. Henceforth the Eskimo was allowed to buy all the imports (excepting alcoholic drinks) for which he could pay in cash or kind. But extension of credit to him was strictly forbidden.

The work of reconditioning the natives depended to a very great extent on the store and the commodities it contained. Until quite recently the Greenland Department decided each year what prices the Eskimos would have to pay for European goods as well as what could be paid for their produce (skins, etc.), and the store could thus be used as a very important educational factor. All commodities deemed beneficial to the Eskimos were sold at a low price, often below cost, whereas luxuries, such as tobacco, were more expensive. The demands for imported goods could thereby to a great extent be regulated to fit various conditions as they occurred.

Should it, on the other hand, be deemed desirable to try to induce the Eskimos to participate in some particular pursuit in which they had not formerly been interested, then the produce of this pursuit would be made to fetch a comparatively high price in the store. Take, for instance, sharkfishing; there are large quantities of shark in the waterways of the district, and the liver is valuable. But the hunters were extremely disdainful of sharkfishing, which they considered beneath their dignity and a fitting occupation only for women, children, or men so old that they were hunters no more.

It had, however, become of the greatest importance for the community in general to find means to increase its income, so that regular sharkfishing had to be undertaken whether the hunters liked it or not. Desirable commodities were, therefore, stored near places where there was believed to be good sharkfishing, and these could only be acquired in exchange for shark liver! The hunters did not like this arrangement, but it helped, nevertheless, and sharkfishing is now of major importance in the district.

The demand for imported commodities is increasing greatly year by year, but the country offers, most regrettably, only very limited possibilities for a corresponding and necessary increase in the income of the Eskimo. His average monetary income is very small—not more than $100 a year—an insignificant amount on which to exist. To this cash income, however, must be added the much larger indirect income received in the form of natural products: the meat (and blubber, which still cannot be sold in the store) of seals and bears, of fish and fowl —the real and natural foundation of the natives' existence.

Poor as the Eskimos of East Greenland undoubtedly are, they nevertheless are probably better off than the average of poorer classes in Europe, their food having an undeniably higher caloric value than that of the average European workman. Their clothing is fairly uniform and they have all warm shifts for the winter. Their living quarters are of necessity small and cramped, but most families have their own houses—or huts—in which to live. They are a free and independent people, who can roam over enormous

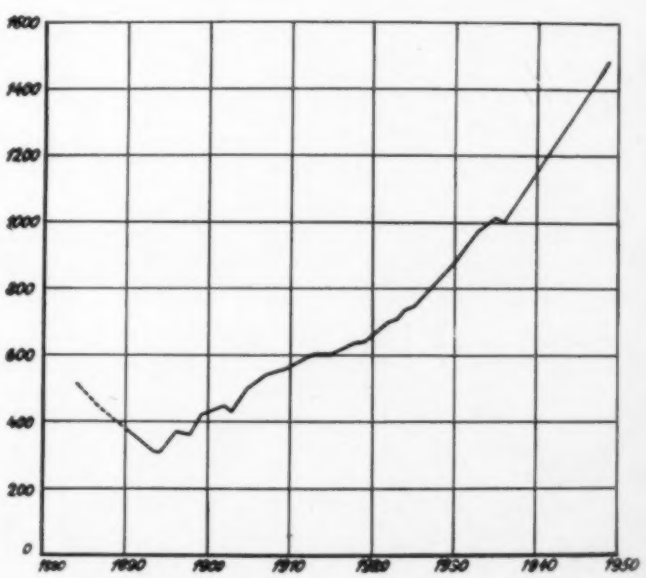


Chart indicating the fall and rise of East Greenland's Eskimo population from 1884 onwards.

A proud mother of East Greenland poses with her baby. Photograph by Jette Bang.

stretches of coast at will; their existence is fairly easy and carefree and their demands on life are luckily small.

The younger generation's ability to learn and practise a trade is very great, and all handicrafts, such as blacksmithing, repairing and running motors, carpentry, etc., are now practised by these sons of a Stone-Age people. Some of them have picked up their trade under the tutorship of the Manager; others have had their regular apprenticeship in some West-Greenlandic workshop; and some few have been taught their trade in Denmark. All the regular work in the Settlement is now undertaken by the natives themselves, and many of them are remarkably good and intelligent craftsmen.

It has proved very difficult to teach the Eskimos to save a little of their small surplus of money acquired in good seasons, or by a stroke of luck in hunting, for use in the difficult and meager days certain to come. Different means to encourage saving have been tried out, but with only scanty success; and though it has always been the duty of the Manager to advise the natives to save when they have more cash than they really need to use at the moment, it was several years before the soundness of this advice was appreciated. The majority understands it now, however. A small savings bank was established in the Settlement about 1938, and interest of four per cent per annum is paid on deposits, the knowledge that money in the bank in some mysterious way breeds more money helping very much to promote the habit of saving.

Since the East Greenland Eskimos have proved intelligent enough to adapt themselves to the new conditions and problems of life, the Greenland Administration has reason to believe that they are able, to a certain extent, to take part in the administration of their own affairs. Men (and women) are consequently elected by the natives themselves to form a Council (presided over by the Manager of the Settlement)

The Eskimo children of East Greenland — like those of North America — are always smiling and happy.

Modern schoolhouse in a small native settlement.

with the right of advising the Greenland Department as to proposals for bettering local conditions—and this Council has often come forth with very good and sound advice.

The Council can also give support in kind to all Eskimos in need, as well as money to procure the necessary hunting gear to young men without the means of acquiring such equipment; and loans are also given to families who wish to improve their houses. The money needed for these loan activities is forthcoming through the administration, which pays in to the Council one-fifth of all native produce sold in the store and two per cent of all wages to Danes and Greenlanders employed in the service of the Settlement.

In case of violation of the laws worked out to suit this primitive community, men of the Council must also assist the Manager in passing suitable sentences.

Another development, important as the material one, has also been in progress since 1894; namely the . . . well, *spiritual* development may be a rather large word to use, but let it go at that. This was carried out under the leadership of the missionary and some teachers from West Greenland. It was to begin with a difficult task as the Eskimos had a firmly rooted dread of evil spirits, and did not even possess in their language any word for a benevolent spirit or god.

They took, however, most willingly to the Christian faith, became very keen churchgoers and tried hard to follow the teachings of the missionary. Their brutal treatment of infants and old, ill or infirm persons ceased almost at once when the administrator and the missionary took over leadership in the Settlement; so did manslaughter—and their dread of evil spirits was gradually uprooted to a very great extent. By 1909 some Eskimos had received such instructions in the Christian faith that the missionary thought it prudent to baptize them. Others followed in ever increasing numbers, and the last of them was baptized in 1922.

A typical weather-station established on the East Greenland coast by meteorologists from Denmark.

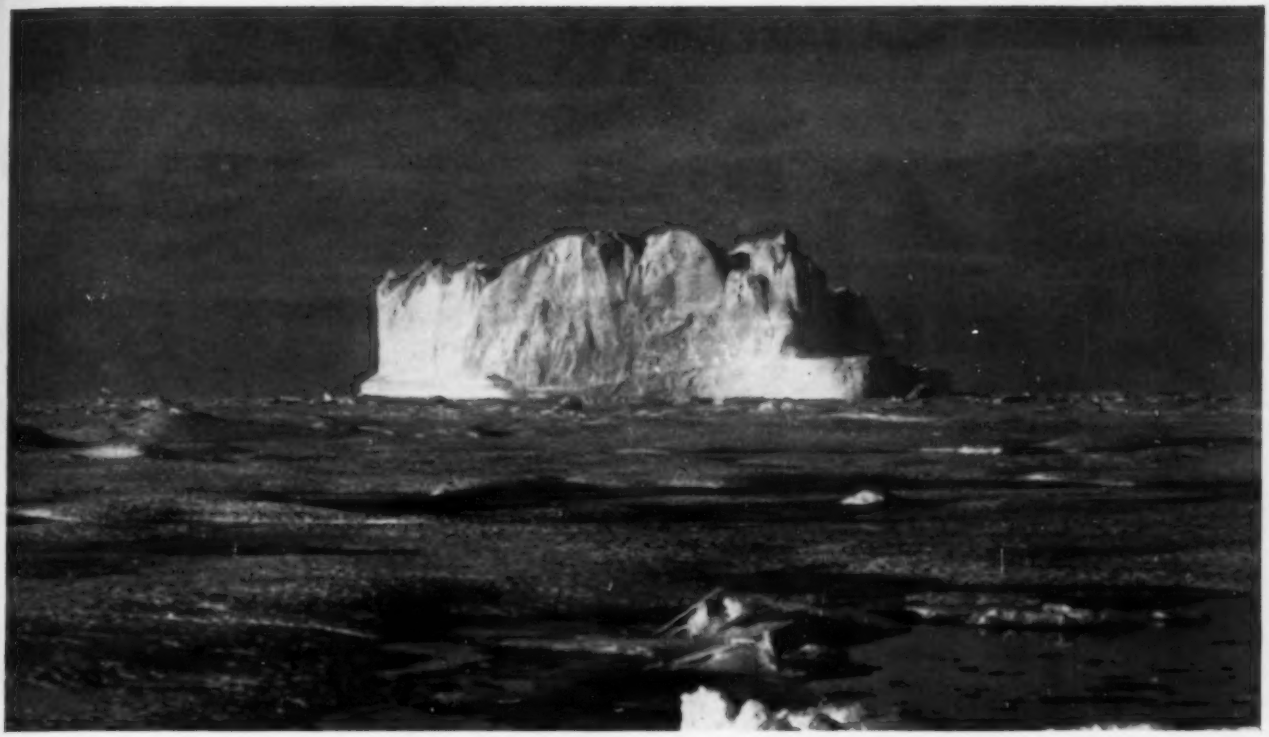
Gale brewing in East Greenland.

The missionary established almost at once a school in the district—to begin with only for those who expressed a desire to be baptized. But in 1906 the first regular teaching of the children began, and before long it was compulsory for those between six years of age and fourteen to attend school as regularly as the roving life of their parents would permit. The teachers came to begin with from West Greenland, where they had been educated in the seminary, but after a while it was thought more to the point to endeavour to educate some promising young men from Angmagssalik as teachers, and a local teachers' school was consequently established in the country in 1935.

There are now nine schools in the District, and the great majority of individuals between twelve and forty years of age can read and write fairly well, do small sums and display some knowledge of geography and history. Danish is also taught in the schools, and several of the Eskimos, particularly those who are in the service of the main Settlement, talk it fairly well and hold responsible positions under the supervision of the Manager.

The old people, who formerly fared so poorly, are now taken care of in an Old Folks' Home, and as they receive an old-age pension when over fifty-five years of age (a gift to all Greenlanders from the Danish Commonwealth), they can live a comparatively carefree life without being a burden to themselves or their families. Orphaned children, too, are cared for by the Administration or by Danish friends of the Eskimos, so that all the suffering which they—and the old people—were once subjected to is decidedly a thing of the forgotten past.

A nurse was sent out to the Settlement many years ago to cope with the illnesses of the population, which have unfortunately increased since the advent of colonization. The most severe illness is tuberculosis, which seems to increase in direct proportion to the use of imported food-stuffs. A small infirmary was simultaneously established in the main Settlement, where more severe cases of illness could be treated, and young native women assist as nurses or midwives, one being stationed in each of the minor native settlements of the District. Some of these girls have received their training in West Greenland, others in Denmark.



Iceberg photographed from Scoresby Sound.

As the population grew, a doctor was stationed in the District, and a comparatively large and very modern forty-bed hospital is under construction; when this is ready, there should be sufficient means available to handle all illnesses in the District for many years to come.

The Eskimos of Angmagssalik now live in sixteen settlements, both large and small, scattered over the District; but the great expansion of the population and a regrettable but fully understandable tendency to concentrate around the main Settlement (with its relatively superior attractions in the form of large warehouses, stores with much-desired goods, regular church services and better schools, wireless communication and shipping—and crowds of people coming and going all the year round) has caused problems which no one could possibly have foreseen some fifty years ago: namely, overpopulation in relation to the seal-hunting possibilities.

The seals (particularly the large ones) are decreasing alarmingly in number year by year, principally owing to the white hunters taking a heavy toll of them on the high seas far beyond the reach of the Eskimos; this development has had a grave, albeit indirect, effect on the natives' possibilities of existence. The only remedy for it seems to be the inauguration of international protection of all seals in the oceans and decentralization of the Eskimos in the old Angmagssalik District, with subsequent re-establishment of them in different localities along the huge stretches of coast where nobody has lived for generations.

The first attempt at decentralization was made in 1924, when a settlement, peopled with former residents of Angmagssalik, was established in far-away Scoresby Sound, where the animals of chase had not been

An Eskimo family at Scoresby Sound.

Right:—Preparing to carve up a narwhale at Scoresby Sound.

Below:—No doubting the prowess of this Eskimo bear-hunter!

taxed for many generations. That measure relieved the overpopulation of Angmagssalik for some time, but the problem became increasingly serious again as the years went by. In 1938 about 150 individuals emigrated to well known hunting localities far down the coast and northwards to Kangerdlugssuak, where they are doing well. But further decentralization is necessary in order that sufficient food may become available to the rapidly growing population.

The Eskimos realize this themselves, but they are very conservative and do not take kindly to the idea of leaving their place of birth. They have, consequently, to be cajoled to go, tempted by accounts of better hunting and living conditions; but they demand first and foremost that a store and a school be established in the new settlement. That is only natural, but it is, nevertheless, rather costly, particularly in view of the shipping necessary to supply these new settlements far away from the old ones. However, since it is necessary for the welfare of the East Greenland population, this demand must be complied with in the years to come.

It is by now quite evident that the population of East Greenland has been saved from extinction by the measures inaugurated by Denmark in 1894. The changes from past to present conditions during little more than fifty years have been very great indeed; but, even so, the Eskimos have adapted themselves with surprising thoroughness, and do not seem to have suffered any psychological damage as a result of the rapid transition from utterly primitive Stone-Age conditions to the more than semi-civilized type of life prevailing today in what has become a strongly European-marked hunters' community.

The main settlement at Scoresby Sound.

EDITOR'S NOTE-BOOK

Lyn and Richard Harrington, wife and husband team of writer and photographer, record the Canadian scene and way of life from coast to coast. Mrs. Harrington is the author of *Manitoba Roundabout*, published this year.

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Donald F. Coates was born in Saskatchewan but has spent most of his life in Montreal. After war service in the R.C.A.F. he studied civil engineering at McGill University, working between terms with the Geodetic Survey in the north. On graduation from McGill Mr. Coates was awarded a Rhodes Scholarship which took him to Oxford to continue his studies.

* * *

V. A. Firsoff is a man of parts: astronomer by training, skier and climber by experience, student of geology and forestry, author, photographer and artist. His published books include *The Tatra Mountains*, *Ski Trace on the Battlefield* used during the war in mountain warfare training centres, *The Unity of Europe* and *The Cairngorms on Foot and Ski*. Mr. Firsoff lives on the Isle of Arran.

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Harry Seaman was born and raised in Saskatchewan but has been a resident of British Columbia for the past sixteen years, except for three years in the army. After some time on the staff of the Prince Rupert *Daily News* he has turned to free-lance writing.

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Ejnar Mikkelsen is a Dane whose name is known wherever there is interest in the north for most of his life has been devoted to work in the Arctic. At a very youthful age he became a master mariner and with his first arctic expedition at the age of twenty he found his life interest. Captain Mikkelsen has led a number of expeditions to East Greenland where he served for many years as Senior Danish Government Representative. He is one of the Governors of the Arctic Institute of North America.

AMONGST THE NEW BOOKS

Ontario Birds

by L. L. Snyder

Illustrations by T. M. Shortt

(Clarke, Irwin and Company Limited, Toronto, 1951. 248 pages, $4.50)

Lack of a comprehensive modern account of the birds of Ontario has long been keenly felt by the increasing number of residents of the province who take a lively interest in their feathered neighbours. The present work, produced by two well-known ornithologists of the staff of the Royal Ontario Museum of Zoology, is intended to meet that want. It is an attractive volume, illustrated with an abundance of excellent line drawings, executed by Mr. Shortt's competent and sensitive hand. The test is clear and easy to read.

"Ontario Birds" is not restricted by custom or precedent, but strikes boldly out along a new path. It is a courageous attempt by an eminent museum ornithologist to popularize ornithology of the systematic and morphological, or museum, type. Whether the attempt will succeed will be known only from the eventual response of the public. No doubt there are in Ontario many bird lovers who desire brevity and an absence of technicality in their bird literature, but whether they will be pleased by seeing swallows described "in brief and non-technical terms" as "small-billed, wide-mouthed, pointed-winged, insect-eating birds belonging to the perching bird Order" time will tell.

The plan of the work, as well as its style, differs from the ordinary. After an introduction in which conservation receives brief mention and four chapters that deal with the structural characteristics of birds and their distribution, migration, and classification, somewhat more than two hundred pages are devoted to orderly discussion of typical birds that occur in Ontario. Many kinds are omitted or given only passing mention, with the result that, of the 351

species of birds that are listed as known to have occurred in Ontario, only 121 are discussed in any detail. Such uneven treatment is sure to give rise to disappointment.

Every now and again the author refers to the fact that restrictions of space prevent him from saying more. It may be remarked, however, that space might have been used to better advantage by omitting repeated remarks of this kind, as well as various other repetitions. There are, for instance, at least five references to the fact that all woodpeckers lay white eggs. The faithful association of scientific names with common names throughout the part of the book that is devoted to detailed accounts of various birds seems unnecessary, since all these scientific names may be found with their everyday counterparts in the systematic list of species, on pages 23 to 32.

Possibly, as a result of the emphasis given to museum ornithology, the treatment of field ornithology in connection with the birds that are specially discussed is of varying quality. Accounts of many species as the field observer knows them are excellent and pleasing. The crow is presented as a mixed blessing, but without indication that the mixture varies from region to region. A "brief memorial" to the extinct Passenger Pigeon leads to the conclusion that, for preservation of any species, "a safety margin of breeding stock is required."

In several places the reader comes across curious attempts to replace bird names that have long been accepted and popular by other names that possess no evident advantage. The reference, for instance, to "The Great Shrike (*Lanius excubitor*) sometimes called the 'Northern Shrike' " has an air of unreality about it, since the name "Northern Shrike" has been in almost undisputed popular and scientific use in North America for more than fifty years and so continues, and no argument for the suggested change is advanced.

It must be remarked, too, that in the work under review relatively little attention is paid to Eastern Ontario. It is to be hoped that the Royal Ontario Museum of Zoology's store of information about birds in that part of the province is greater than might be supposed from the paucity of reference to the subject in this book.

The publishers must take responsibility for the unhappily inadequate editing and proof-reading. Such light and annoying editing is becoming all too common and can prevent even the best of writings from providing the pleasant and undisturbed satisfaction that the reader has a right to expect.

There is no doubt that, in spite of indicated possibilities for improvement, "Ontario Birds" is a striking and original book, with an important niche to fill. It will do much to stimulate popular interest in birds in the province beside the Great Lakes and will long be found in the front rank of Canadian ornithological publications. HARRISON F. LEWIS.

Spain

by Sacheverell Sitwell

(Clarke, Irwin, Toronto, $3.25)

The average "travel book" can be an unmitigated bore and it was with some trepidation that I first examined Sacheverell Sitwell's *Spain*, fearing to find it one more monotonous recital of tedious facts and figures, the bane of most such volumes. It is anything but that.

The author avoids the facts and figures pitfall as skilfully as he does the other, that of publishing a personal diary in which the reader discovers far more of the author than of the subject. Treading the safer way, the middle path, Sitwell discusses what he has seen in several visits to Spain in an exceptionally well-informed and sensitive manner without being either condescending or didactic. There is enough of the author in it to make the tour of notable places convincing, and enough of the "guide book" material to make it fascinating to those who already know Spain or hope to know it better. It is almost equally readable (in smaller doses perhaps) for those who never have seen, or hope to see, this most romantic land.

Even a casual perusal brings to us some realization of the unbelievable artistic wealth of Spain, and it is by no means the richest of European countries. It makes our modern chrome and red leather culture seem rather stark and empty by comparison.

Maps, and appendix of notes, and some truly notable photographs are included. DOUGLAS LEECHMAN